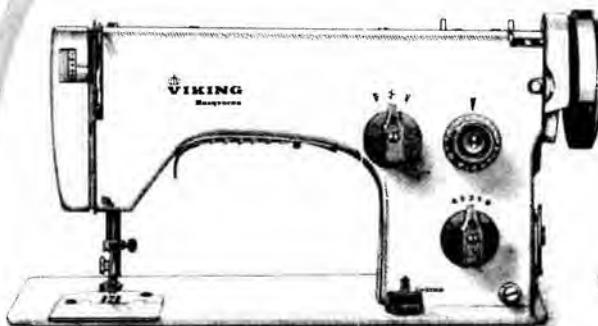




How to sew with your new Viking

4310 3310 1310



*Here's to many
happy hours with
your new sewing
machine!*

You are now the owner of one of the most modern and easy-to-use sewing machines on the market. It is our sincere wish that your new Viking will come up to all your expectations and will give you good service for many years.

This booklet is presented in order to help you get the most out of many pleasant hours with your machine.

Wishing you every success with your new Viking.



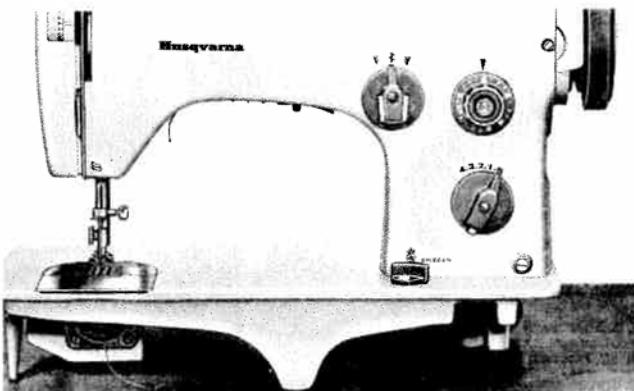
**HUSQVARNA
VAPENFABRIKS
AKTIEBOLAG
HUSKVARNA — SWEDEN**

In countries other than the USA and the UK, the Viking is sold under the name of Husqvarna. Technically the machines are identical and for practical reasons the illustrations in the manual show the Husqvarna.

Table of contents

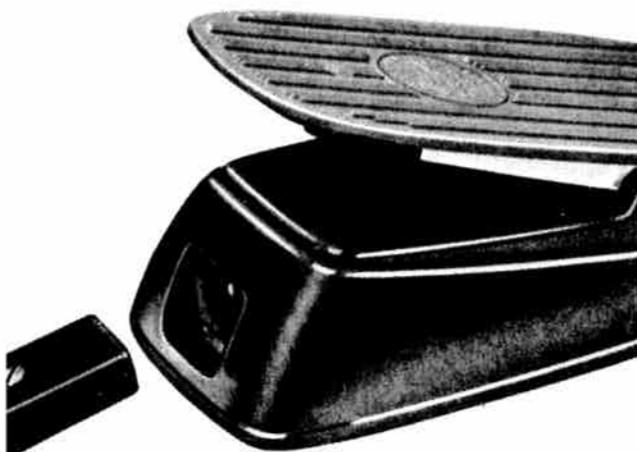
	Pages
Accessory box, contents	39—40
Blind stitching	19, 20
Blindstitching plate	20
Bobbin and bobbin case	7
Bobbin winding	6, 7
Buttonholes	22—24
Buttonholes, reinforced	25, 26
Buttons, sewing on	27, 28
Care of the machine	45, 46
Edge guide	12
Elastic blindstitch	20
Extra accessories	41—44
Fault finding	47
Feed dog, lowering	28
Foot control	2
Foot control, connecting	2
General view of the machine	48
Hemmers	30
Lighting	3, 46
Lower thread, bringing up	9
Lower thread, tension	7
Lower thread, threading	7
Machine, putting away	12, 13
Needle and thread	4, 5
Needle, changing	5
Overscasting	16, 17
Overscasting of terry cloth, jersey	18
Pattern key	21
Pattern stitching	21, 22
Presser foot, changing	13
Presser foot, pressure	38
Quick mend	31—34
Raised seams	29
Releasing presser foot pressure	38
Reverse stitching	12
Seam former	22
Stitch length knob	11, 15
Stitch width knob	11, 15
Stitch selector	15, 17, 19, 22
Straight stitching	11
Thread	4, 5
Thread cutter	10
Thread tension	10, 11
Three-step zigzag	31
Upper thread, tension	10, 11, 16
Upper thread, threading	8, 9
Zigzag stitching	15, 16
Zipper fastening	13, 14

We reserve the right to change at any time the design or the equipment.



Connecting the power cord

Before plugging in, see that the mains voltage is the same as that of the machine. The machine's voltage is given on a plate at the back of the motor.



Connecting the foot control

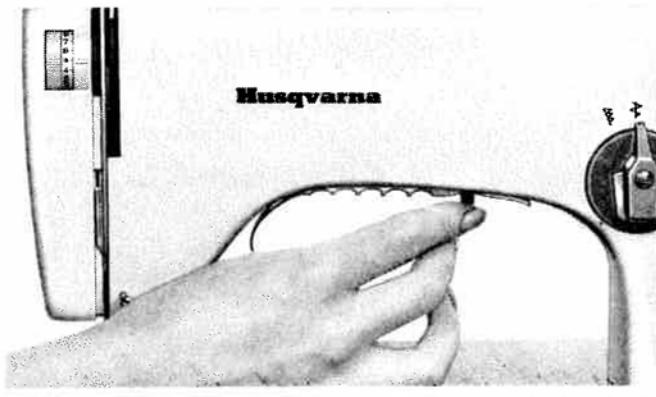
Insert the foot control plug into the socket at the back of the machine and set the foot control in place under the sewing table.



Place the foot control so that the foot rests on it comfortably. Low-heeled shoes are most suitable. Start the machine by gently pressing down the foot control. Remember that you never need to assist or brake the machine with the hand wheel while sewing. The speed of the machine is regulated solely by increasing or releasing pressure on the foot control. Neither should you try to increase the feeding by pulling the fabric behind the needle or slow it down by pulling the fabric in front of the needle. The foot control may perhaps become slightly warm during use. This is not a cause for worry since the resistor which is built into the foot control gives off heat, especially at low speeds.

The light switch for the lamp is on the underside of the machine's upper arm.

Husqvarna



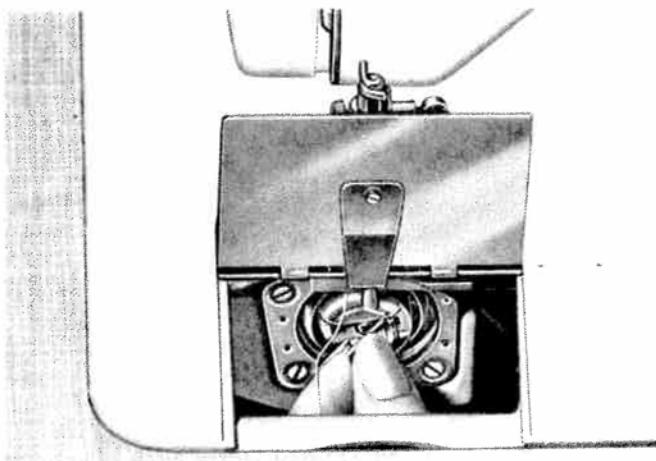
There is a projection which may be used to lower the lamp on the left side of the lamp guard. This is good for hand sewing, threading the needle or for detail work. To change the light bulb, see the chapter "Care of the Machine".

Husqvarna



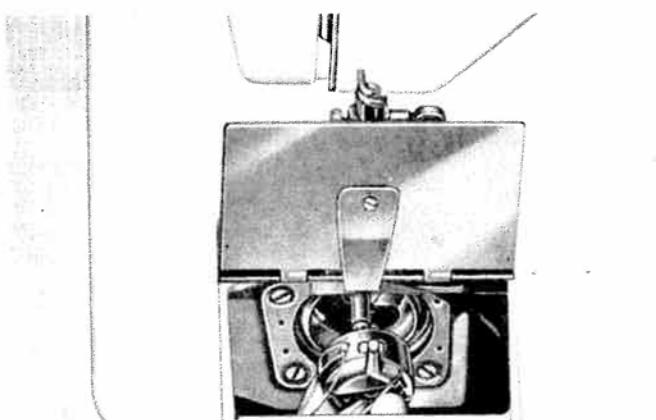
Removing the bobbin case from the shuttle

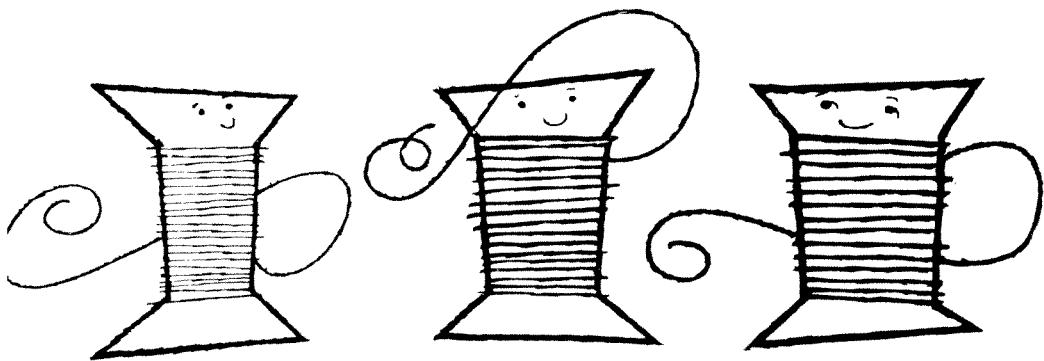
First see that the needle is in its highest position. (Turn the handwheel towards you). Lift the shuttle door upwards.



The bobbin case can be removed, when the latch has been pushed forward. As long as the latch is kept in this position, the bobbin will remain in the case. When you release the latch, the bobbin will be released.

If there is sufficient thread on the bobbin, replace the case with the "arrow head point" in the recess on the gripper plate. Close the shuttle door.

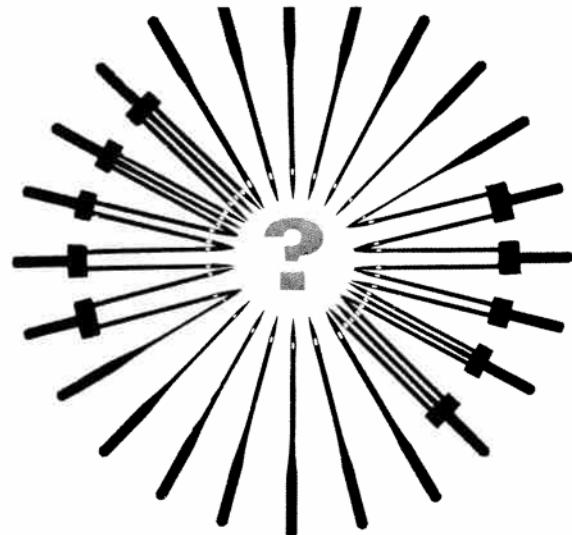




Do you have the right thread?

To obtain the best sewing results, it is very important to use the correct thread and needle for the fabric to be sewn. An old rule says that you should use cotton thread for cotton and linen fabrics, silk thread for silk and woollen fabrics. Accordingly, synthetic thread should be used for the new synthetic fabrics and this type of thread has also begun to be available. If you use synthetic thread, it should be spun thread but at present it must be said that the synthetic threads do not give fully satisfactory results and we therefore recommend the use of cotton thread. All cotton thread used for machine sewing should be mercerized. It is softer and smoother and also more lustrous than the unmercerized thread. A special embroidery or darning thread (which is two-corded instead of three-corded like ordinary sewing thread) should be used for decorative stitching. If possible, embroidery thread should also be used for buttonholes (No. 50 gives the very best results) and it is also suitable for decorative stitching and overcasting very sheer fabrics. Always use the same thread for upper and lower threads. The sizes of thread and needle to be used are shown on the table on the next page. This table also shows that the higher number a thread has, the finer it is but with needles it is just the opposite: the higher the number, the coarser the needle. With regard to the choice of a needle, it may be said that No. 90 is a general-purpose needle which can be used for most fabrics but for sheerer fabrics and finer thread, a finer needle should also be used. The primary reason for choosing a finer needle for sheer and tightly woven fabrics is that the threads in the weave are damaged by a coarse needle. Obviously a coarser needle which will withstand the greater strain must be used for very heavy and stiff fabrics.

Under the table at the front there is a type-plate with an illustration of a needle and stating the no. of the needle system, which is 705.



Changing the needle

Loosen the needle clamp screw and remove the needle which is to be changed. The flank of the needle has a flat side — turn it away from you and push the needle up into the needle socket. It should be inserted as far as the built in stop. Tighten the screw and the needle is held firmly.

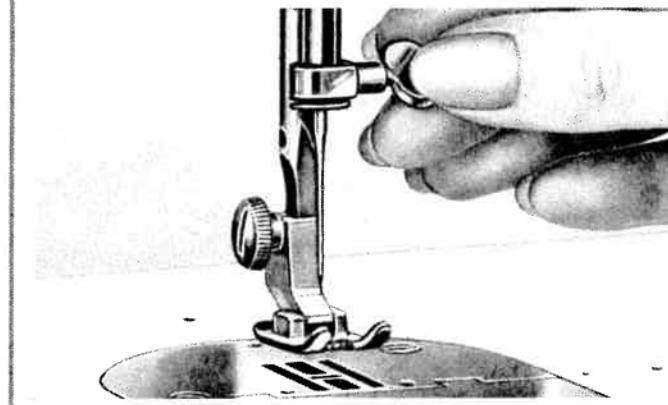
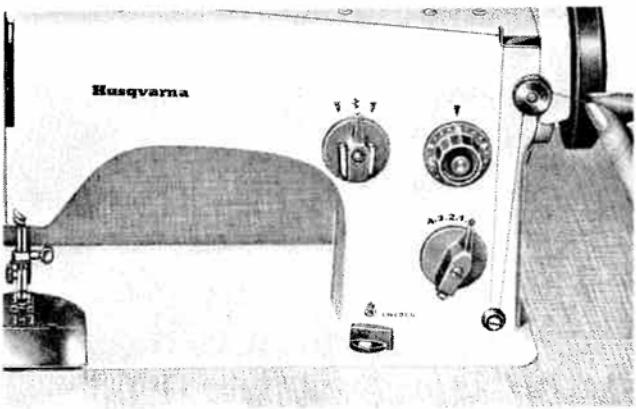


Table for selecting needle and thread

	Sewing thread English No.	Coloured sewing thread No.	Silk thread	Embroidery thread or Darning thread	Needle No.
Delicate fabrics such as fine silk and linen, batiste voile, organdie, tulle and sheer nylon fabrics	60—			60—	70
Light-weight to medium fabrics — poplin, piqué taffeta, woollens, muslin, plastic and heavy nylon fabrics	50—60	26	100/3	40—50	80
Medium-weight fabrics, sheeting, cotton twill, velveteen, light-weight draperies, jersey and thin leather	40—50	26	100/3	30—50	90
Heavy fabrics — heavy woollens and suiting, heavy sheeting and woven plastic material	40			20	100
Very heavy stiff fabrics, such as wind-proofed material and khaki drill	30				110
Extra heavy work					120

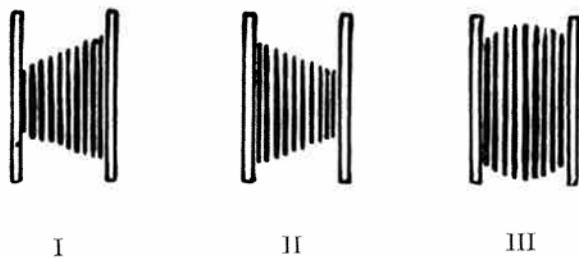
The above table shows combinations of needle and thread which are most suitable in each particular case.

Husqvarna

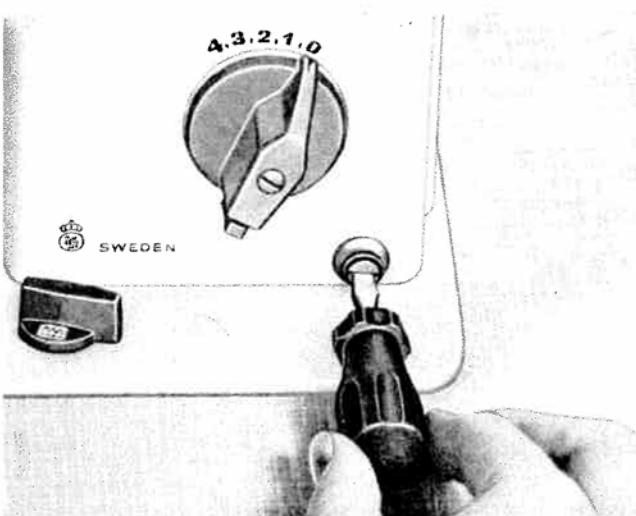


Place a spool of thread on the spool pin. Run the thread through the thread guide at the face plate, further through the thread guide at the hand wheel, then between the tension discs in the tension device at the table.

Place the bobbin on the bobbin spindle which is pressed in at the same time. This automatically disengages the machine. Wind the thread around the bobbin two or three times clockwise and start the bobbin winding by pressing the foot control, and wind at a moderate speed. Stop winding before the bobbin is completely filled — abt. $1/32"$ (1 mm) from the edge. The spindle automatically engages the sewing mechanism again, when the bobbin is pulled off.



If you notice that the bobbin is winding unevenly as in Figure I, turn the thread tension device clockwise with the aid of the heavier screwdriver until the winding becomes even.



If the winding looks like Figure II, check to see if the bobbin is properly pressed in on the spindle. If this is correct, turn the thread tension device counter-clockwise until the winding becomes even. Figure III shows a correctly wound bobbin.

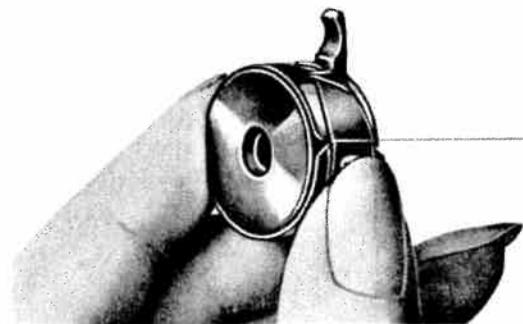
Bobbin and bobbin case

When the bobbin winding is ready place the bobbin beside its case. Notice which way the thread runs. Place the bobbin in its case without turning it around.

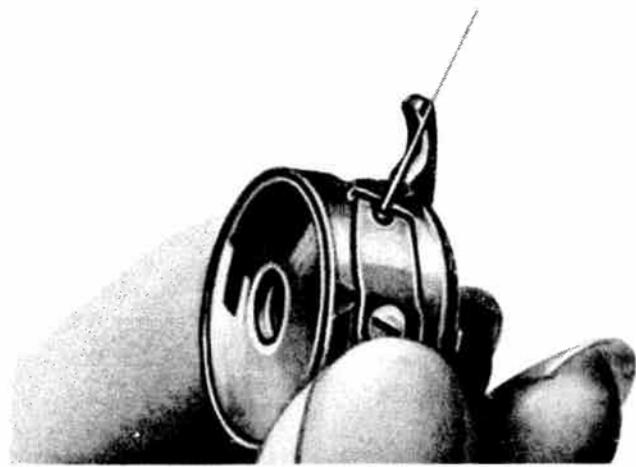


Threading the lower thread

Slide the thread into the slot on the edge of the bobbin case.



The thread is pulled in under the tension spring. Also check that the bobbin rotates in the direction of the arrow when the thread is pulled.



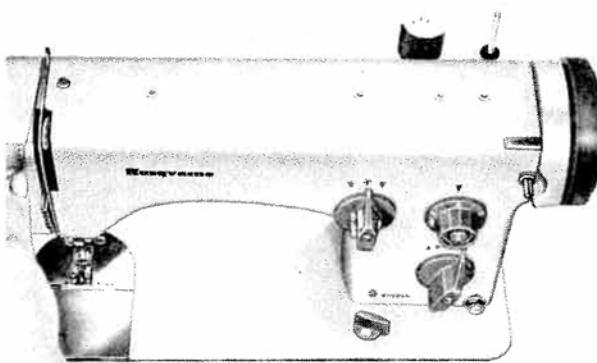
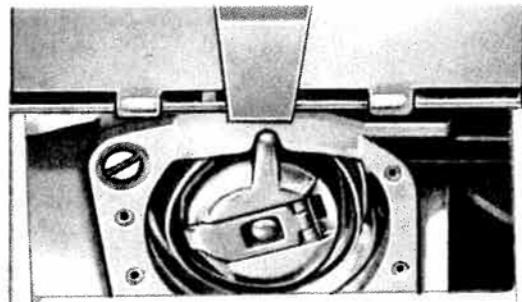
Tension of lower thread

If it is necessary to adjust the tension of the lower thread, take out the small screwdriver from the accessory box. Fit it in the larger screw on the tension spring and turn it not more than 1/10th of a turn to the left if the thread tension is too hard, to the right if it is too loose.



(cont.)

Set the bobbin case in place with the projection straight up. Press the bobbin case slightly so that it comes into the correct position. Shut the shuttle door.



Threading the upper thread

In the accessory box you will find a spool of thread which was used to test your machine. More details about thread are to be found in the chapter "Do you have the right thread?" Make sure that the presser foot is raised. Place the spool of thread on the left-hand spool pin and thread for sewing.

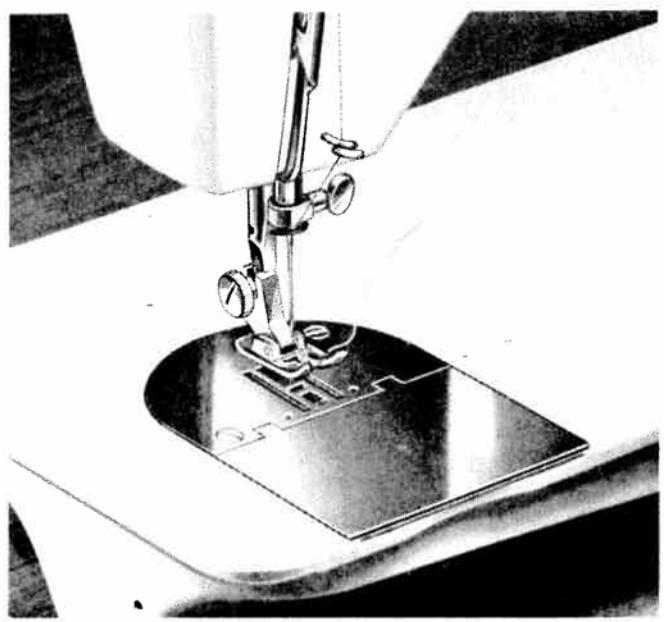


Place the thread in the thread guide on the "upper arm". Then draw the thread to the left and down around the thread guide.



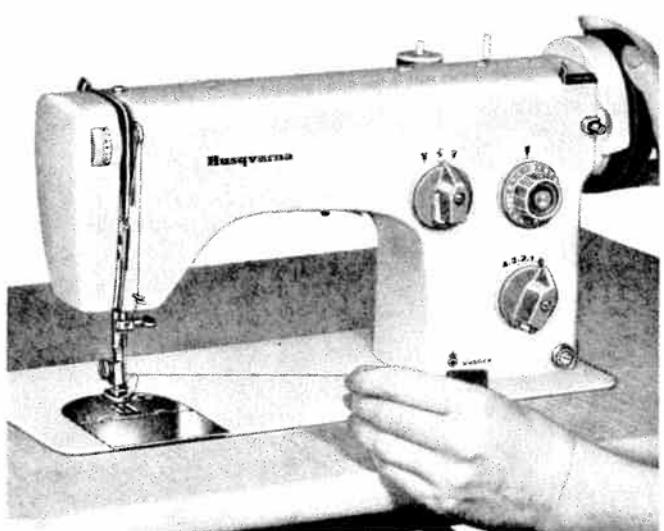
Now continue threading by drawing the thread through one of the eyes of the thread take up lever. Then pull the thread through the thread guide coil.

Be very careful to see that the thread actually lies behind the black thread guide up on the needle bar. Thread the needle from the front.

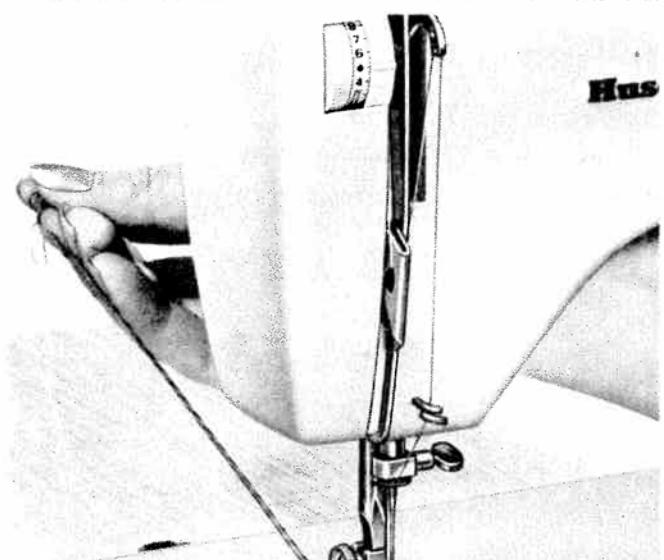


Bringing up the lower thread

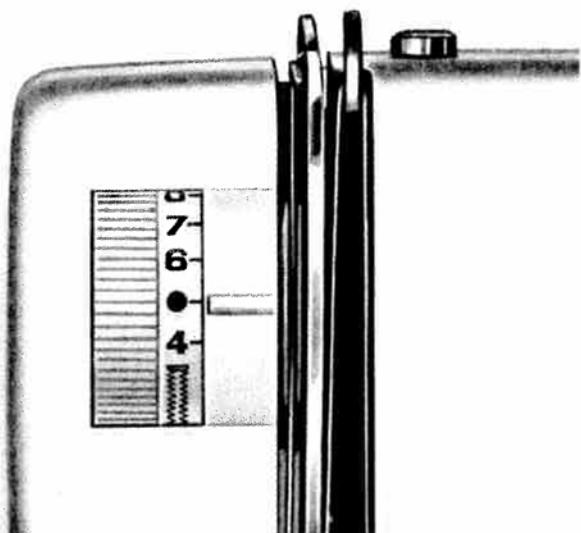
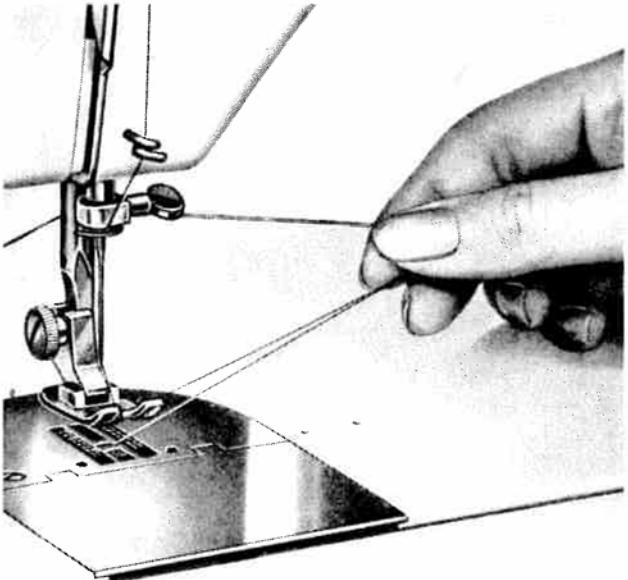
The lower thread is brought up by turning the hand wheel toward you until the needle goes down once and then up again. Then pull the upper thread carefully toward you and the loop which draws up the lower thread is easily caught. Do not pull the thread before the needle has returned to its highest position. Neither should you pull the upper thread too hard as this may bend the needle.



Pull the threads about 6" (15 cm.) toward the rear. If the thread ends are too short, the thread may glide out of the eye of the needle when you begin to sew.

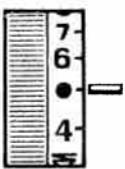
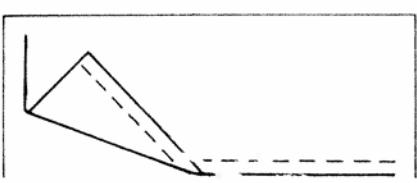
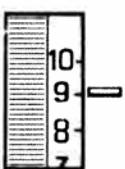
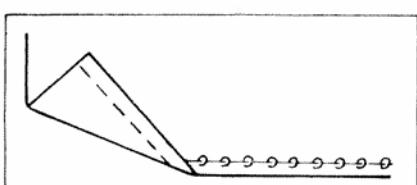
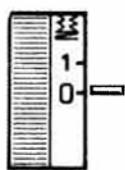
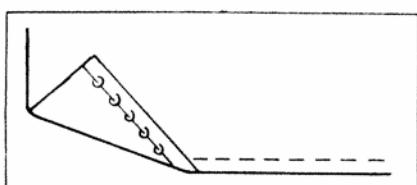


On the back of the presser bar you will find a notch, the thread cutter, which makes it easy for you to cut off the threads.



Tension of upper thread

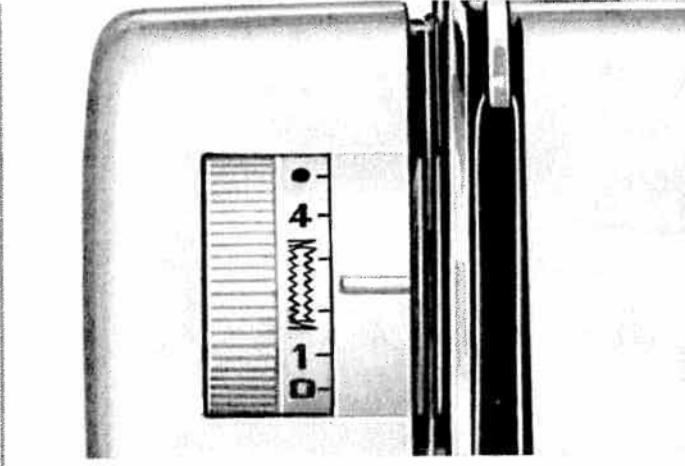
It is very important to have the correct thread tension when sewing. You can see the knob which regulates the tension in the picture at the left. It is graduated from 0 to 10 and equipped with a stop. Normal thread tension is obtained by setting the pointer at the red spot. Your machine has been tested with the thread which accompanies it and with the thread tension knob set at the red spot. It may be necessary to adjust the thread tension somewhat if you use thread of another thickness.



In order to easily understand the importance of correct thread tension, you can try different thread tensions by sewing on a scrap of cloth. Begin by using an excessively loose tension, i.e. you turn the thread tension knob upwards as far as it will go. Look at the cloth and you will find the lower thread lies straight and the upper thread is drawn into the lower side. If you turn the knob downward, the opposite occurs. The upper thread lies straight and the lower thread comes up in loops on the top of the cloth.

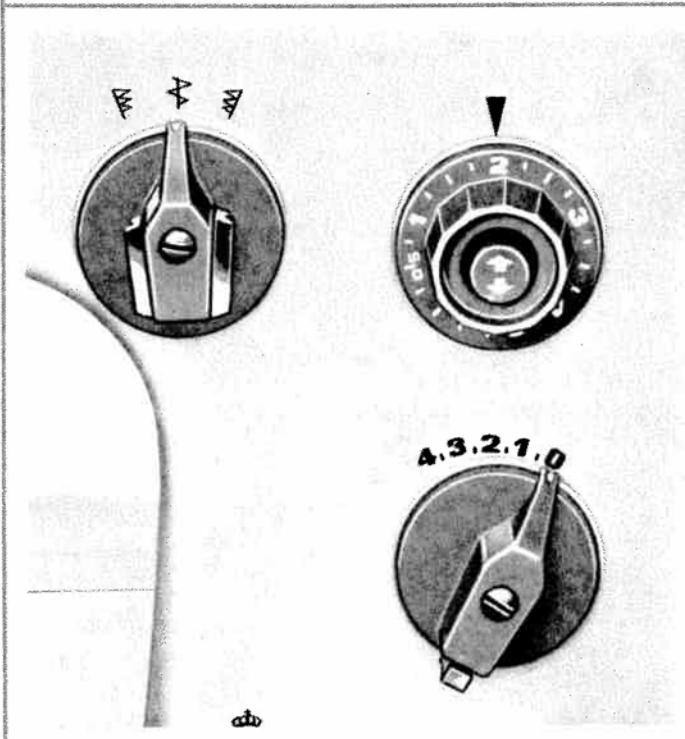
The thread tension is correct when the threads interlock in the middle of the layer of material. Before starting to sew, check the tension by sewing on a piece of the same fabric you

the thread tension knob for the tension to be used for making buttonholes. This is also most suitable for close pattern stitching, monogramming, embroidering, etc.

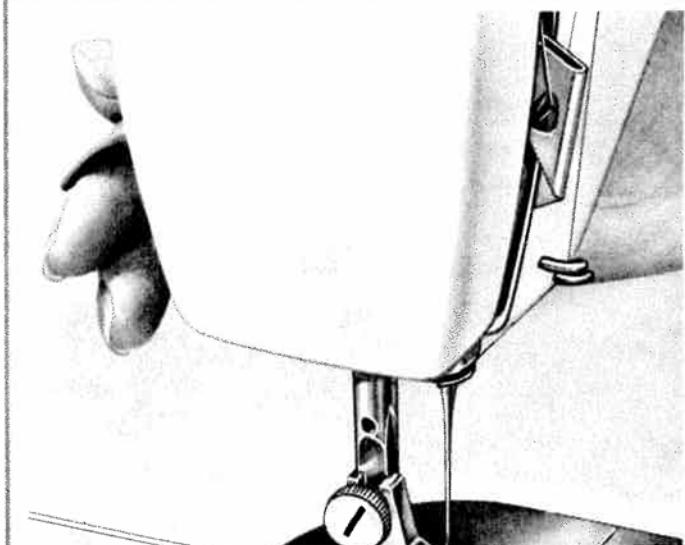


Straight stitching

is the most common type of stitching. The machine should be set as follows: The left-hand knob is used to set the starting position of the needle. This is useful in making buttonholes, sewing on buttons, etc. but for ordinary sewing, it should be set on the middle position. The upper right-hand knob, the stitch length knob, is graduated from 0 to 4. The micrograduating between 0 and 0.5 allows precision setting. Set it at the desired stitch length, normally 2. The lower knob, the stitch width knob, should be on 0 for straight stitching.



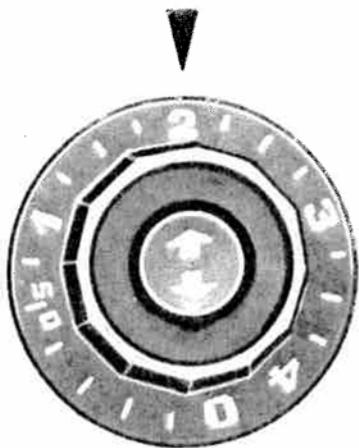
The picture shows how to begin about $\frac{1}{4}$ " (1—2 mm) in from the edge of the fabric in order to prevent it from being drawn into the needle hole. Lower the presser foot. Always begin sewing with the needle down in the fabric and finish with the needle up out of the fabric. This prevents the needle from being bent or broken.



Straight stitching

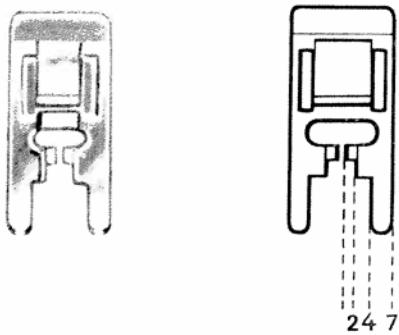
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The illustration shows straight stitching with different stitch lengths.



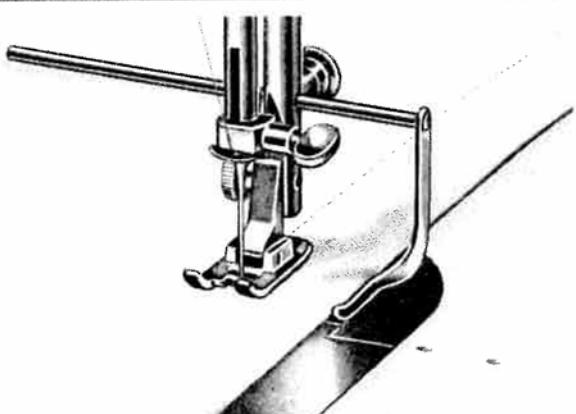
Reverse stitching

In the middle of the stitch length knob is a button which is intended for reverse stitching. If you press the button in and up, the machine will sew in reverse but will revert to sewing forward as soon as you release the button. For more extensive reverse stitching, you can lock the button by pressing it in and down. It is released when you press it upwards.



Presser foot for straight stitching and zigzag stitching

The presser foot which is fitted on the machine at delivery is used for straight stitching, zig-zag stitching and a number of other stitches. As you can see, it has different notches which can be used as guides when sewing. If you wish to have a seam allowance of about $\frac{1}{4}$ " (7 mm.), let the material run even with the outer edge of the presser foot. By moving one step inwards, you will have a seam allowance of about $\frac{5}{32}$ " (4 mm.). The innermost notch gives a seam allowance of about $\frac{5}{64}$ " (2 mm.).



Edge guide

You can easily sew with wider seam allowances with the aid of the edge guide which you will find in the accessory box. The edge guide is inserted through the hole in the presser bar and is secured to the bar by means of an attachment screw which is found in the accessory

Changing the presser foot

Most of the presser feet which accompany the machine have the form of loose soles which are held in place on the presser foot by a spring. If you wish to change the presser foot, first make sure that the needle is in the highest position. (Turn the hand wheel toward you.) Remove the presser foot by drawing it toward you while pressing slightly downward.

Slide the new presser foot over the front edge of the bracket as shown in the illustration. There is a spring on the lower end of the bracket. Slide on the presser foot so that the round transverse pin on the presser foot fits into the space between the bracket and the spring. Then press lightly backward and downward and the presser foot will come into the correct position.

Certain presser feet cannot be constructed at loose soles and then the bracket must also be changed. Make sure that the needle is in its highest position. Then loosen the retaining screw with your left hand (use the screwdriver if it is too tight) and remove the presser foot with your right hand.

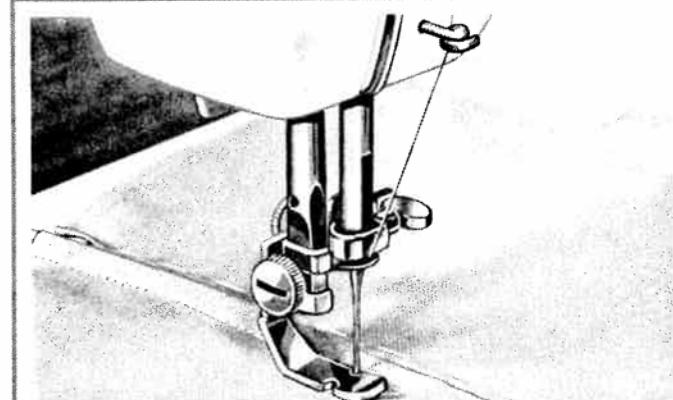
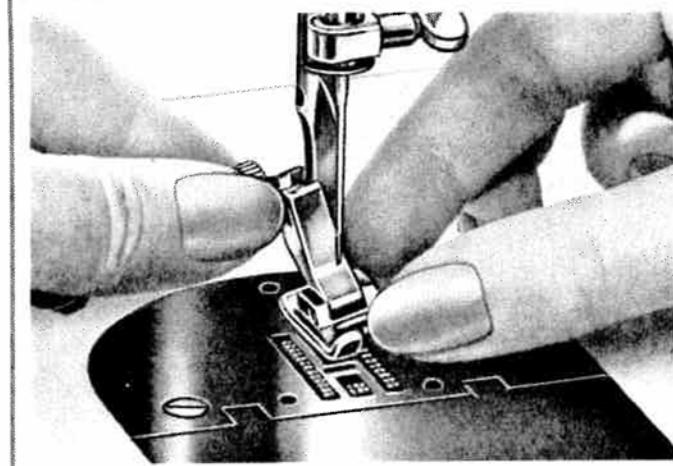
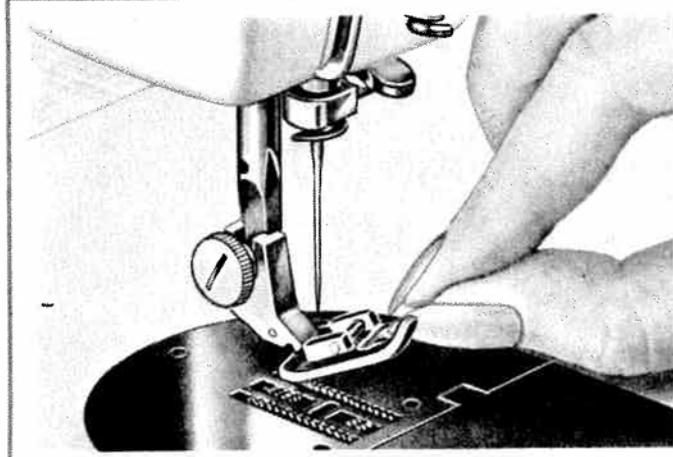
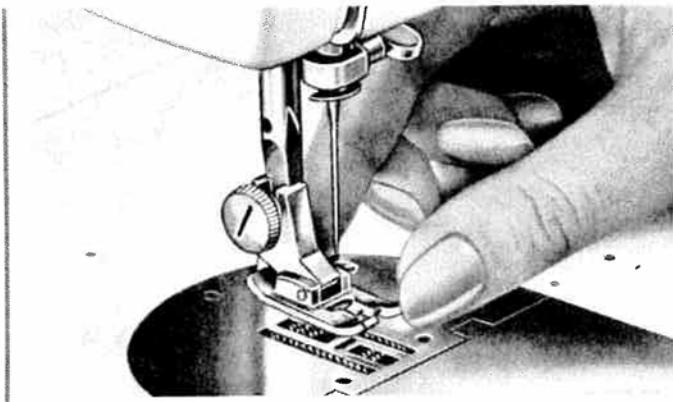
Attaching zip fasteners

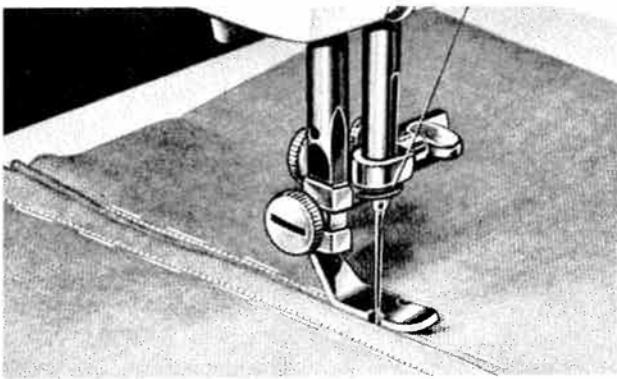
Baste the opening together with long stitches and light tension on the upper thread. Leave about $\frac{3}{4}$ " (2 cm.) open at the beginning of the opening. Press the seam open and baste the zipper on the underside of the seam.

Set the machine for straight stitching and bring the needle to its highest position. Change to the zipper foot (41 11 483). It is adjustable by means of a screw located at the rear. Loosen the screw and move the presser foot to the left so that the needle passes through the notch on the right side of the presser foot.

Step 1

Open the zipper about $\frac{3}{4}$ " (2 cm.) and stitch down the left side. Stop with the needle down in the fabric after stitching a bit and lift the presser foot. Close the zipper, lower the presser foot and stitch down to the end of the zipper.



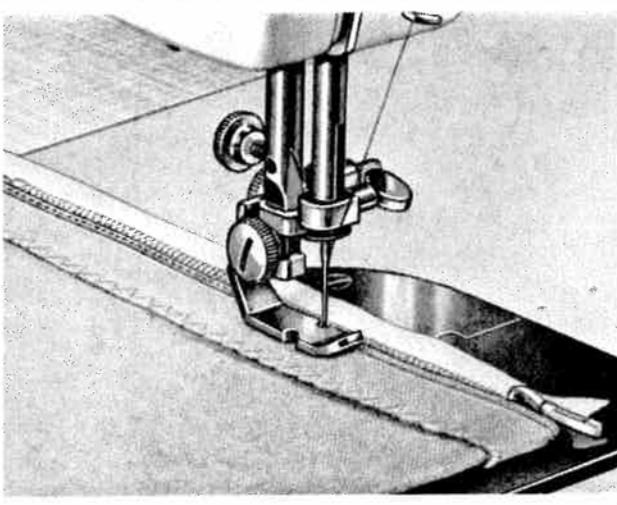


Attaching zip fasteners

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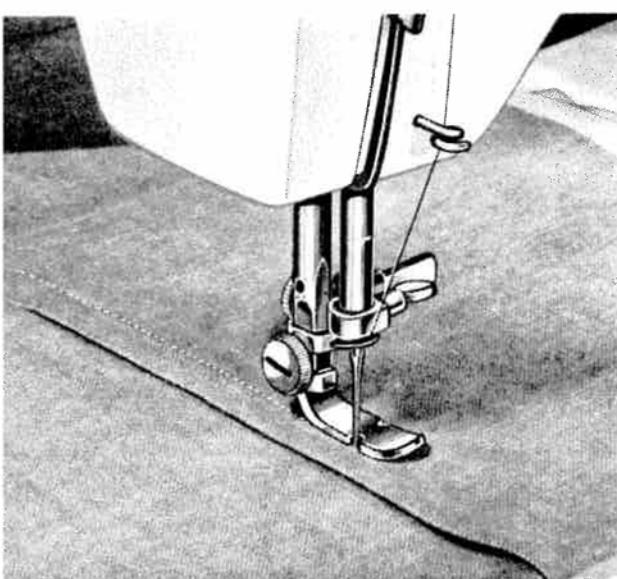
Step 2

Bring the needle into its highest position, loosen the screw and move the presser foot to the right so that the needle passes through the notch on the left side of the presser foot. Sew the right side in the same way as the left. Finish off with a seam which connects the two long seams. Remove the basting threads.



Zipper attached under front edge of opening (concealed zipper)

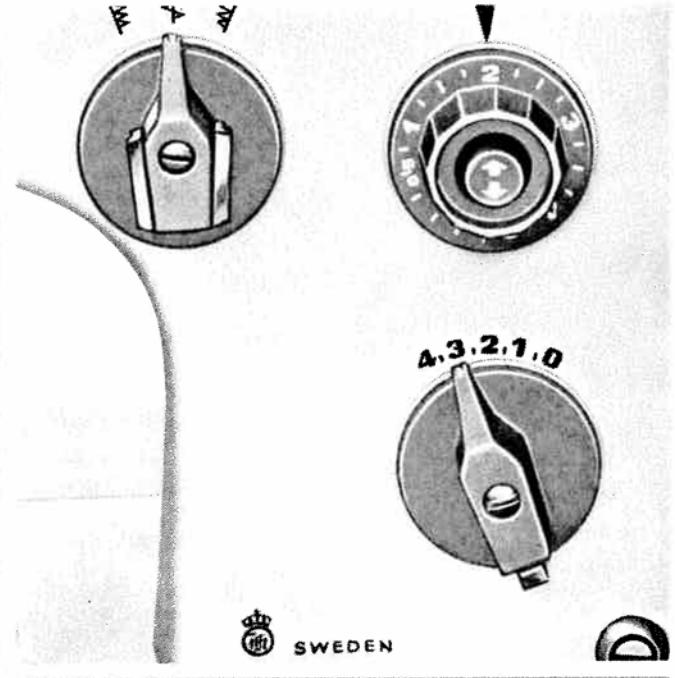
Raise the needle into the highest position. Attach the adjustable zipper foot and set it so that the needle passes through the notch on the right side. Baste the opening together with long stiches and light tension on the upper thread. Leave about $\frac{3}{4}$ " (2 cm.) open at the beginning of the opening. Fold the seam allowance on the lower fabric about $\frac{1}{16}$ " (2 mm.) from the basted seam and stitch it to the right edge of the zipper, but turn the work and sew from the bottom up. The zipper should be closed from the beginning but stop sewing with the needle down in the fabric about $\frac{3}{4}$ " (2 cm.) from the end, raise the presser foot and open the zipper so that the slide comes behind the needle. Lower the presser foot and finish sewing.



Loosen the screw on the presser foot and move it to the right of the needle. Turn the garment and stitch the other side of the zipper from the right side. Begin with a seam straight across the lower edge and then stitch from the bottom up. Remove the basting threads.

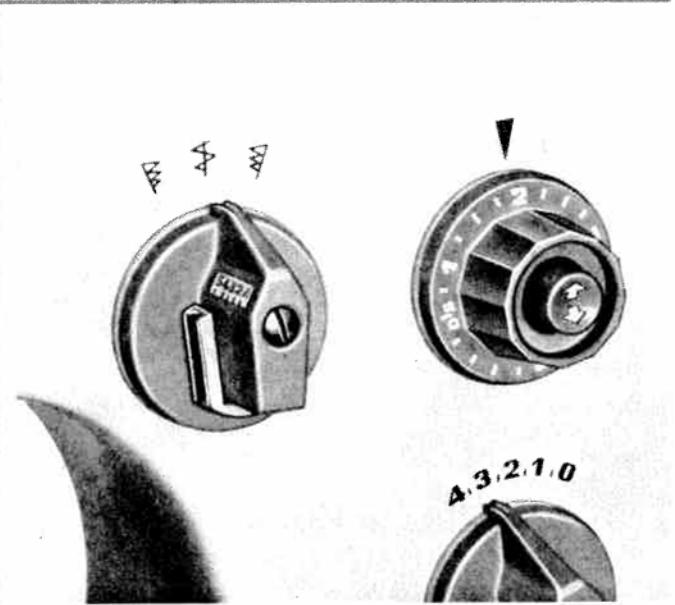
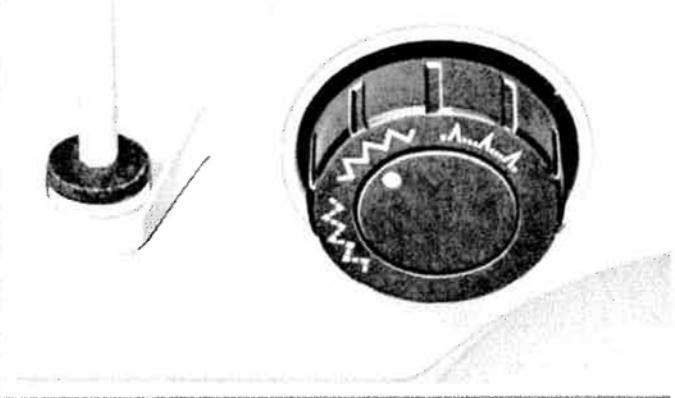
Zigzag stitching Practica

When you go over to zigzag stitching, you must make the acquaintance of another knob — the stitch width knob. Make sure that the regulator knob is set on the middle symbol and that the stitch selector is set on zigzag symbol. The stitch width knob is graduated from 0 to 4. Try out the various stitch widths on a scrap of material. The width and length of the stitch may be altered while the machine is running. However, if the machine is standing still, the needle must be at the highest position when you adjust the stitch width knob. You can set the needle in the highest position by turning the han wheel toward you.



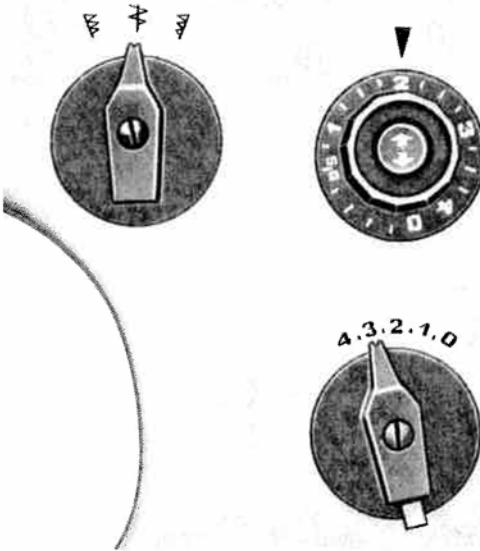
Zigzag stitching Combina

When you go over to zigzag stitching, you must make the acquaintance of another knob — the stitch width knob. Make sure that the regulator knob is set on the middle symbol. The stitch selector which is on the back of the machine, should be set on zigzag. If this is not the case, be sure that the stitch width knob is set on 0 and turn the stitch selector so that the zigzag symbol comes opposite the white dot. The stitch width knob is graduated from 0 to 4. Try out the various stitch widths on a scrap of material. The width and length of the stitch may be altered while the machine is running. However, if the machine is standing still, the needle must be at the highest position, when you adjust the stitch width knob. You can set the needle in the highest position by turning the hand wheel toward you.



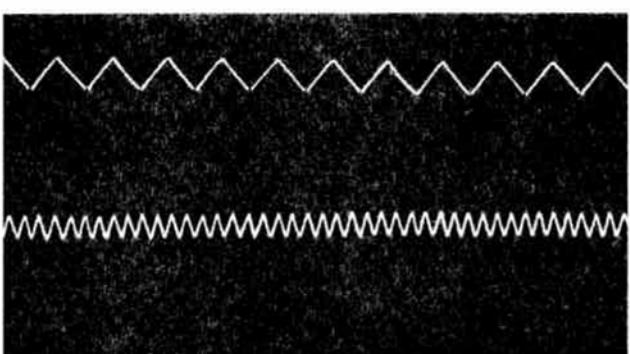
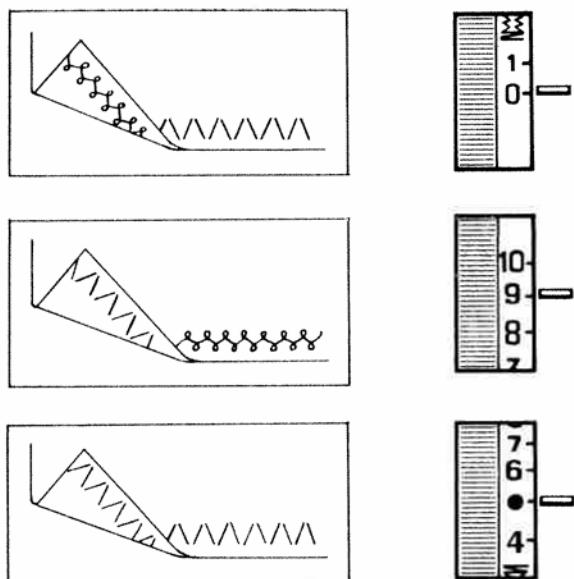
Zigzag stitching Zig-zag

When you go over to zigzag stitching, you must make the acquaintance of another knob — the stitch width knob. Make sure that the regulator knob is set on the middle symbol. The stitch width knob is graduated from 0 to 4. Try out the various stitch widths on a scrap of material. The width and length of the stitch may be altered while the machine is running. However, if the machine is standing still, the needle must be at the highest position, when you adjust the stitch width knob. You can set the needle in the highest position by turning the hand wheel toward you.



Thread tension

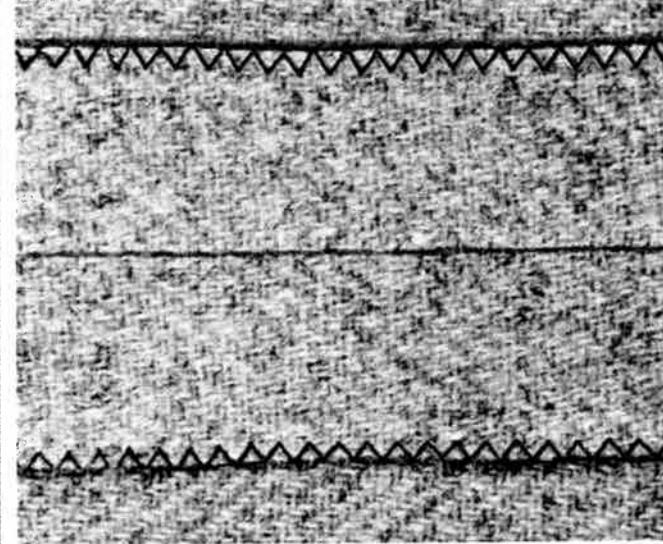
Before you begin to use the zigzag stitch, check that the thread tension is the same as when you did straight stitching. Use a scrap of material to see how the stitches look if you set them on the loosest, upper picture, respectively the hardest, middle picture, thread tension. The correct thread tension will look like that in the lower picture.



You can make any number of combinations of stitch width and stitch length. This is shown clearly in the illustration.

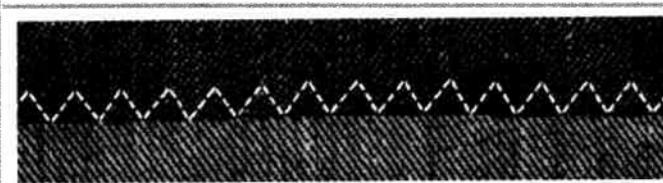
Overcasting

The adjustment must be adapted to the fabric you wish to sew. For example, for a medium-weight woollen material, 2 in length and 3 in width would be suitable. The result of this is shown in the picture. See that the needle catches the edge of the fabric. You can overcast each edge individually or, if the seam allowance is narrow, you can put the edges together and overcast them together. The edges should be trimmed before overcasting.



Three-step zigzag

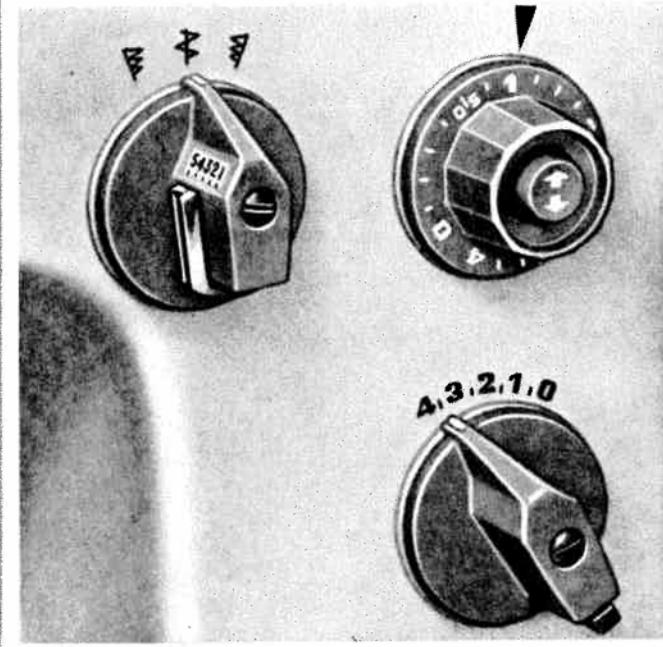
You have now come to three-step — the practical stitch with many different uses — among others you can use it for sewing in jersey, knitwear and terry cloth.



Three-step zigzag

Practica

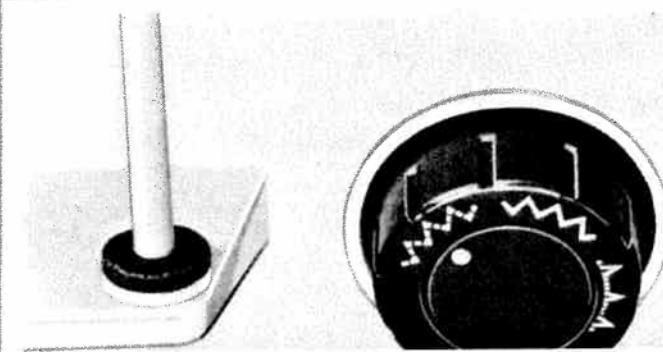
First check that stitch former A is in the machine. If it is not, proceed as follows: Turn the hand wheel toward you till the needle reaches its highest position. Set the stitch width knob on 0 and the stitch selector on 5 and change to seam former A. Then set the stitch selector on 3 for three-step zigzag, stitch length on 1 and the stitch width knob on 4.



Three-step zigzag

Combina

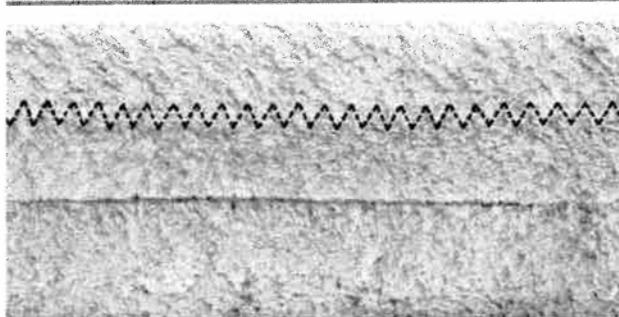
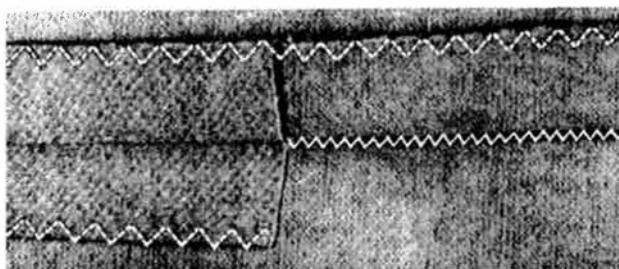
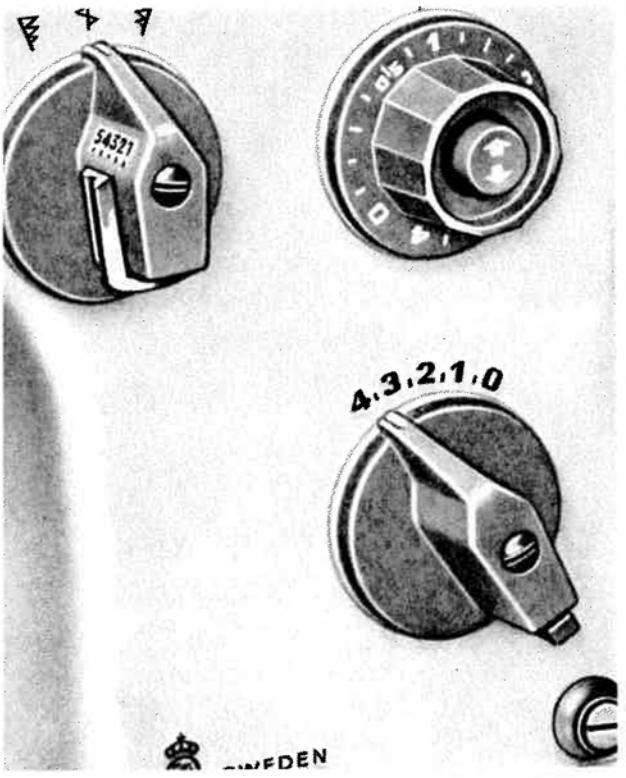
When setting the stitch selector, make sure that the stitch width knob is on 0. Set the stitch selector on the back of the machine so that the symbol for three-step zigzag comes opposite the white dot. Then set the stitch length 1 and the stitch width 4.



Practica Combina

(cont.)

Overcasting in jersey should be done with three-step zigzag because it is more elastic in its characteristics. The straight seam should also be replaced by a more elastic stitch, such as zigzag with a stitch length of 1 and a stitch width of 1—1.5.



In terry cloth, seams should be overcast with three-step zigzag. It is even better and stronger if you stitch the seams down onto the garment. Even though the stitching goes through on the right side of the fabric, it is hardly noticeable. Terry cloth can also be hemmed in the same way with three-step zigzag. The illustration shows a seam sewed with straight stitching where the seam allowances have been stitched in the manner described. The arrow shows stitching sewn with thread the same colour as the fabric.

The edges of thin, easily frayed fabrics have a tendency to pucker when overcast with ordinary zigzag. Three-step zigzag is suitable for such fabrics.

Three-step zigzag is also suitable for overcasting heavy fabrics. You should sew a double row of stitching in order to fasten the coarse threads in the weave.

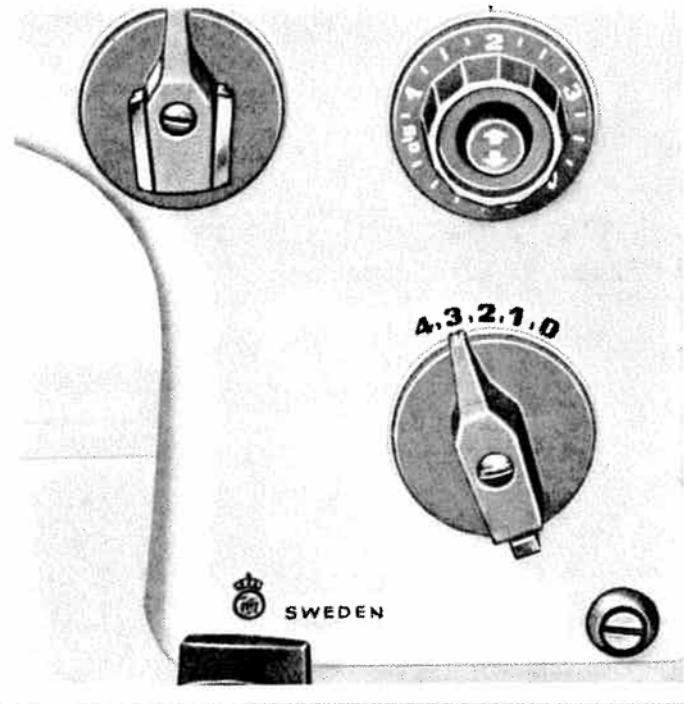
Blindstitching

is the stitch which enables you to hem skirts, for example, without the stitches showing on the right side. As you can see on the folding sketch, it consists of four straight stitches and one zigzag stitch.

Blindstitching

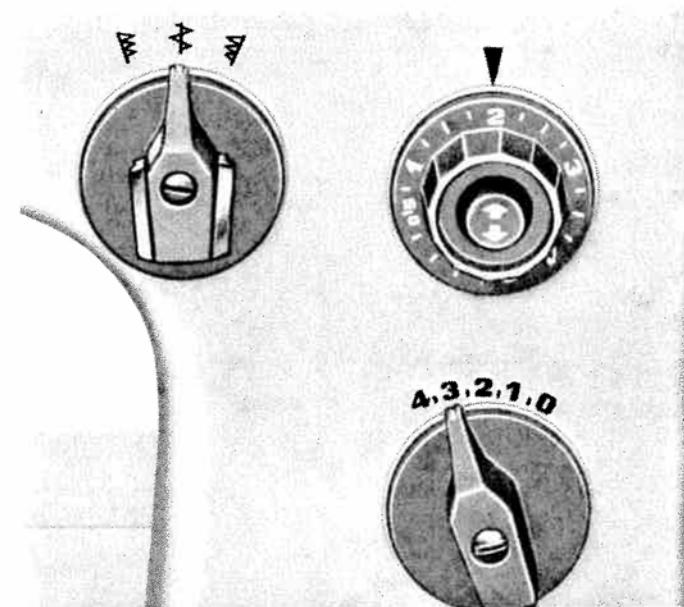
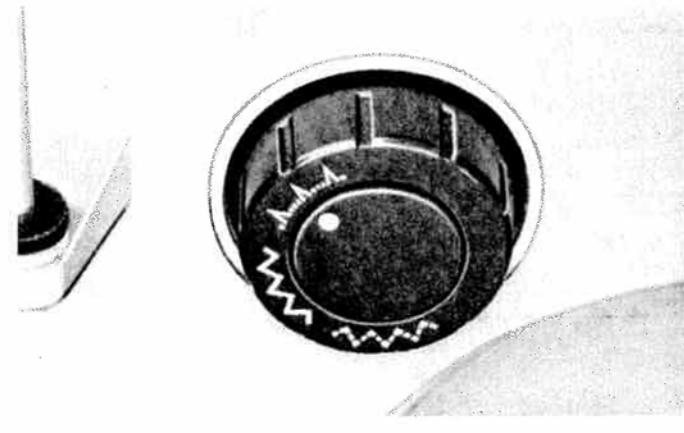
Practica

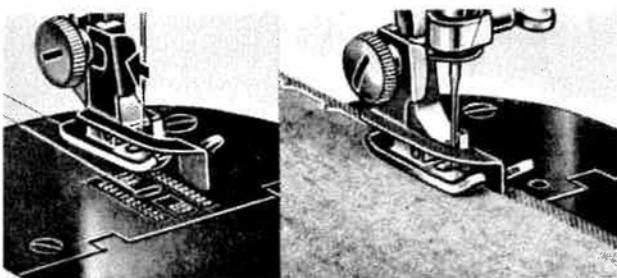
Blindstitching is found on seam former A. Set the stitch selector on 2. Make sure that the regulator knob is set on the central position. Choose the stitch length 1 to 2, depending on the quality of the material.



Blindstitching Combina

Blindstitching is set with the knob on the back — the stitch selector according to the centre figure. Make sure that the regulator knob is set on the central position. Choose the stitch length depending on the quality of the material.





Illustrating
(cont.)

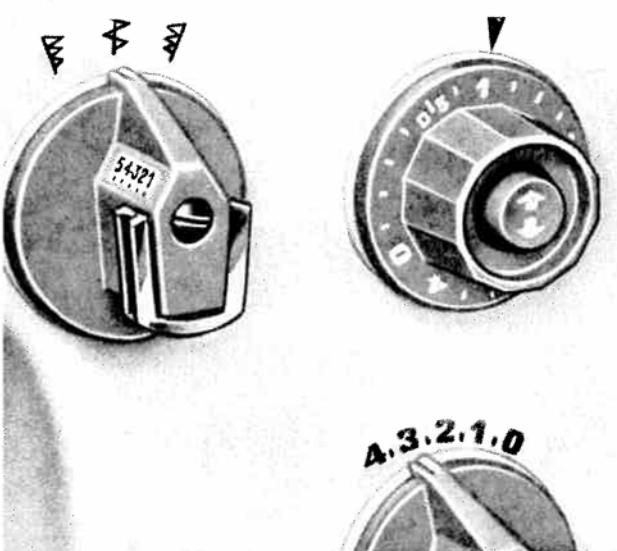
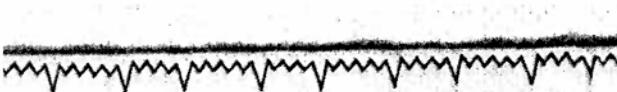
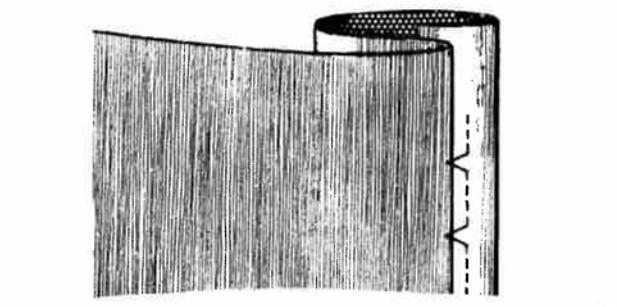
You will find the so-called hemming plate (41 12 522) in the accessory box. Loosen the presser foot screw a little and slide in the hemming plate as shown in the picture. Tighten the presser foot screw and make sure that the hemming plate sits squarely down on the presser foot. The plate serves as an edging guide.

Fold the fabric as shown in the sketch and then set the knobs as shown in the picture, stitch length 2—2.5 and stitch width 2.5—3. The adjustment is an average setting which implies that you can decrease or increase the length of the stitches if you wish to vary the distance between the catches. Before you begin to sew, engage the reduction gear and be certain that the folded edge follows the hemming plate. The width of the stitch can also be varied. The upper picture shows how the stitch does not reach the edge of the fabric. The stitch width must then be increased or you must check to see that the edge of the fabric exactly follows the hemming plate.

In the next picture the width of the stitch has been increased too much which has caused an excessive "bite" in the fabric. A correctly sewn blind hem should look like the lower picture. The stitch catches only one thread of the folded edge. By using thread of the same colour as the fabric the result will be virtually "invisible".

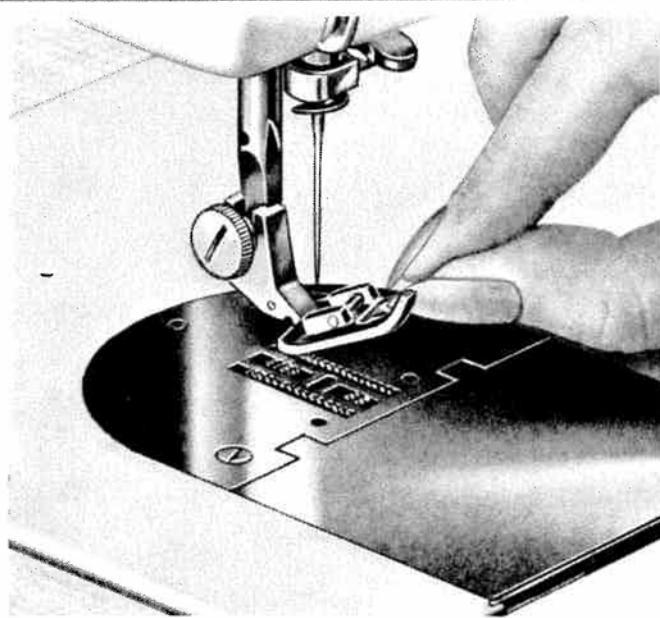
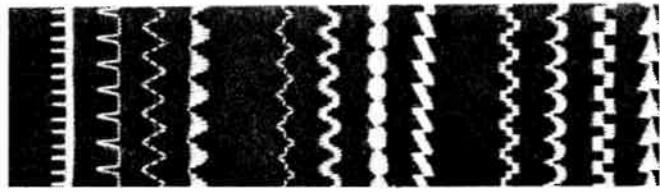
Elastic blindstitch Practica

has small zigzag stitches between the larger zigzag stitch. It is used for hemming elastic materials especially those which are inclined to stretch excessively in width. Check that seam former A is in the machine and set the stitch selector on 1, the stitch length knob on 1—1.5, and the stitch width knob on 2.5—3. The folding of the fabric and the fine adjustment of the stitches are done in exactly the same way as for blindstitching.



Practica

Before you begin to sew patterns, you should change the presser foot. You will find the pattern presser foot (41 11 395) in the accessory box.



Remove the presser foot which is on the presser bar and exchange it for the pattern presser foot. When it is in position, select the stitch you wish to sew from the above picture or from the pattern code.

The patterns are to be found on three so-called seam formers. The utility stitches are grouped on seam former A. On the pattern key you can see what patterns you can sew with the different seam formers. The dot on the stitch length knob shows a suitable basic setting of this knob and the stitch width knob is usually set on 4. You can naturally vary both the stitch width and stitch length as desired from these basic settings.

A		1 1 2 2 3 4 4	0,3 1-1,5 1 2-2,5 1 0,3 0,3-4	4 2,5-3 4 2,5-3 4 4 1-4
B		1 2 3 4 4	1 0,3 0,3 0,3 0,3-4	4 4 4 4 1-4
C		1 2 3 4 4	0,3 0,3 0,3 0,3 0,3-4	4 4 4 4 1-4

Practica

(cont.)

Different pattern stitches are also pictured on the back of the seam formers. Check to see that the right seam former is in the machine. If this is not the case, first set the needle in its highest position. Then set the stitch width knob on 0 and the stitch selector on the zigzag symbol. Then grasp the seam former with your middle finger on the catch. Press it upward, take the seam former out of the machine and exchange it for the one you want to use. Set the seam former in place, turn it and push it in so that it is locked in place by the catch. Then set the stitch selector, the stitch length and stitch width knobs according to the pattern key.

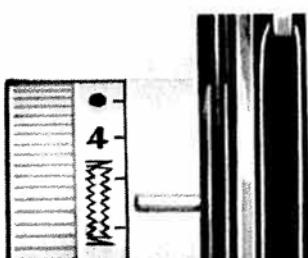
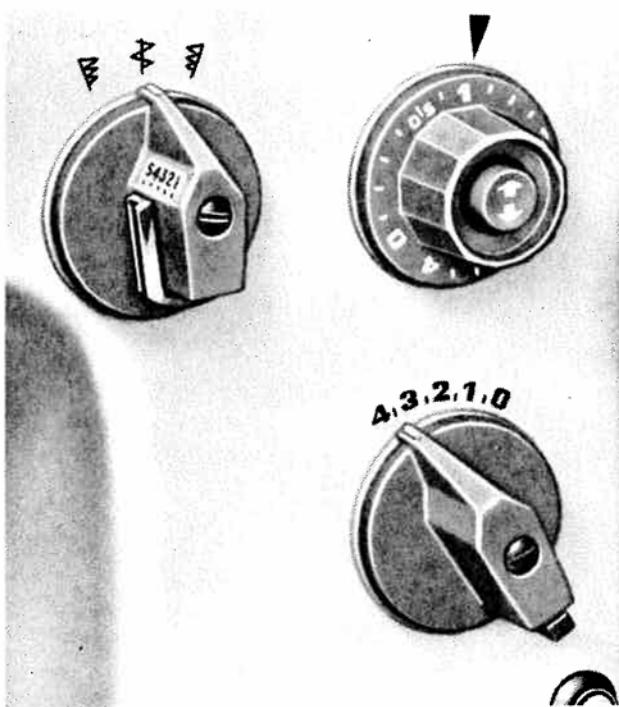
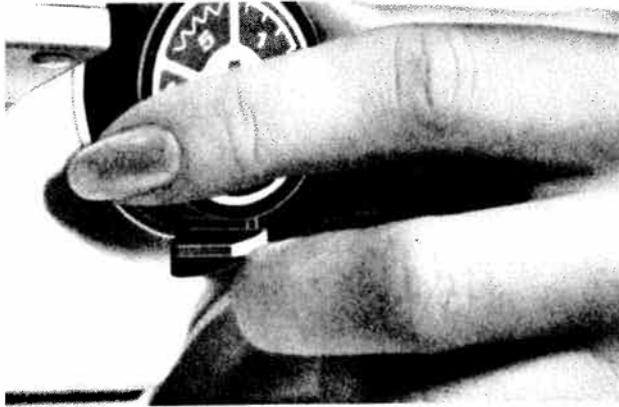
NOTE: Before you make the adjustments, be sure that the needle is in the highest position. Remember that you should begin to sew a short distance in from the edge of the fabric. Set the thread tension knob on the buttonhole symbol. Use embroidery thread for pattern stitches. See more about this in the chapter "Do you have the right thread?"

NOTE: Never start the machine before you have made certain that a stitch former is in the machine.

Buttonholes

In order to be able to sew buttonholes, we must change to the buttonhole presser foot (41 11 650). You will find it in the accessory box and you attach it in the same way as the ordinary presser foot. The buttonhole presser foot is graduated so that you can make buttonholes of the right length.

Loosen the thread tension by turning the thread tension knob to the buttonhole symbol. It should perhaps be pointed out that the buttonhole will look better and be more even if you use a finer thread. More about thread can be found in the chapter "Do you have the right thread?"



Practica

For buttonhole setting, you begin as usual by making sure that the needle is in the highest position. Set the stitch selector on 5. Set the stitch selector on 5. Set the stitch length knob on about 0.3 and press in the reverse stitching button and fasten it.

NOTE: When sewing buttonholes, the reverse stitching button must not be regulated by hand. Turn the regulator knob for the starting point to the left. Turn the stitch width knob to 4 and slide the catch under the knob inward. Then turn the knob to 2, towards stop.

Buttonholes: Combina

For buttonhole setting, you begin as usual by making sure that the needle is in the highest position. Set the stitch selector on the zig-zag symbol. Turn the regulator knob for the starting point to the left. Set the stitch length knob on about 0.3 and press in the reverse stitching button and fasten it.

NOTE: When sewing buttonholes, the reverse stitching button must not be regulated by hand. Turn the stitch width knob to 4 and slide the catch under the knob inward. Then turn the knob to 2, towards stop.

Buttonholes: Zig-zag

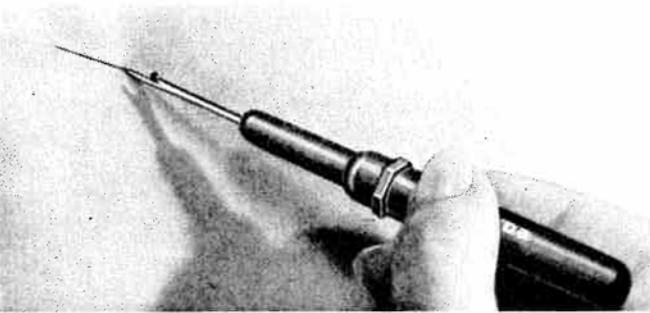
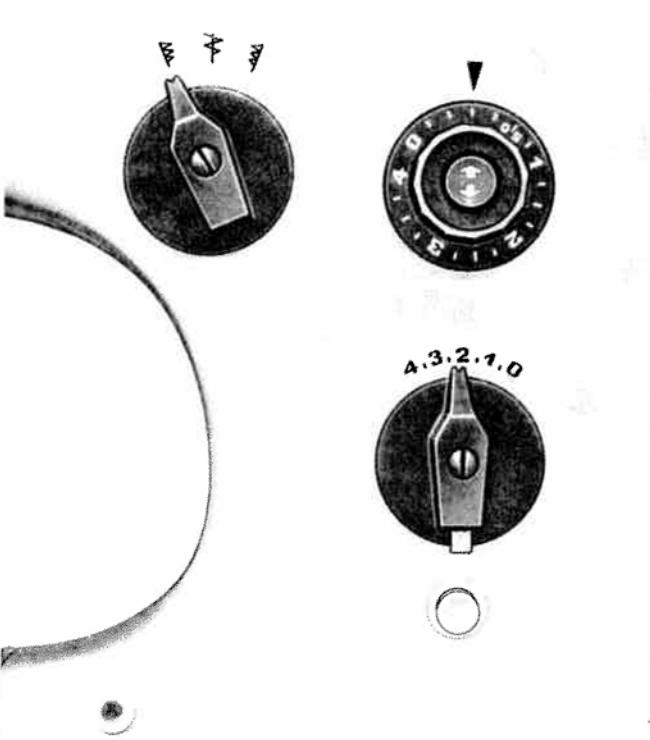
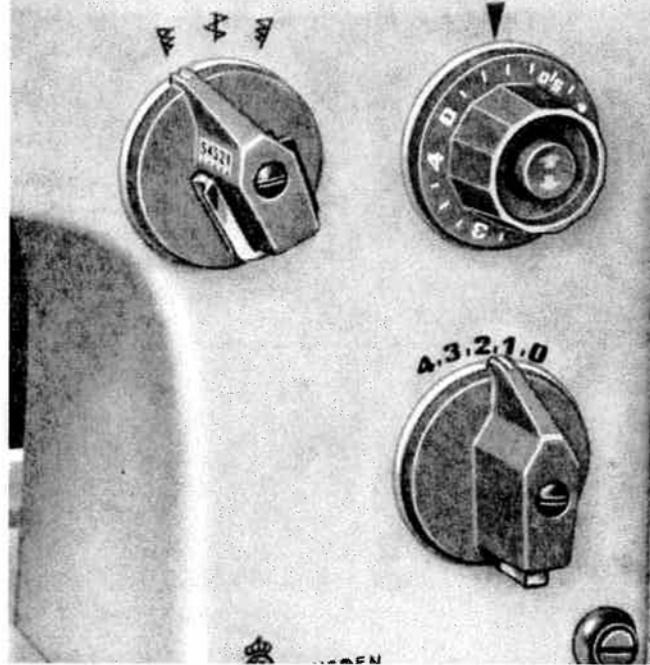
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NOTE: When sewing buttonholes, the reverse stitching button must not be regulated by hand. Turn the stitch width knob to 4 and slide the catch under the knob inward. Then turn the knob to 2, towards stop.

Marking out the button-holes

It's done in such a way that you take a buttonhole knife and carefully make an imprint threadwise in the fabric. If the fabric is washable, you can mark it with a pencil or chalk. On delicate fabrics, marking is done with thread.

Now you can place the fabric under the presser foot but remember to place the marking with attention to the fact that the machine begins to sew backward.



(cont.)

First make a trial buttonhole on a scrap of material. Begin by sewing the first column. If the stitches are not sufficiently close together, reduce the stitch length slightly. Stop the machine when you have reached the right length. See that the needle is raised up out of the material.



Set the stitch width knob on 4 and release the reverse stitching button by pressing it upward. Hold back the feeding of the fabric and sew 3—4 stitches. Then stop the machine with the needle up out of the fabric.

Set the stitch width knob on 2 against stop and the regulator knob for the starting point at right. Sew the other column until it is as long as the first. Stop the machine with the needle up out of the fabric.

Set the stitch width knob on 4. Stop the feeding of the fabric and sew 3—4 stitches. Stop the machine with the needle up out of the fabric.

Draw the catch on the stitch width knob upward and set the knob on 0. Lock the thread with a few stitches while holding back the fabric.

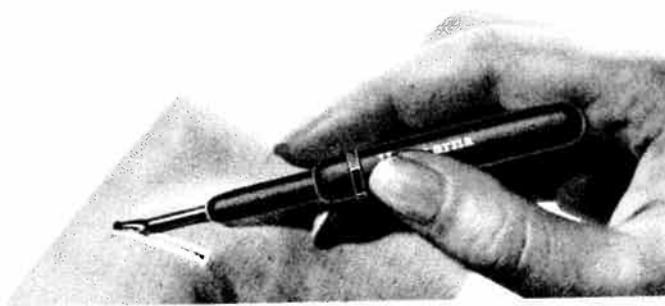
THE AUTOMATIC KNIFE, WHICH you will find in the accessory box, is equipped with a sheath which, when taken off, can be pushed onto the back of the knife and thus provides a good handle.



When you have finished sewing all of the buttonholes, it is time to cut them. Do this by piercing the fabric at right angles until the curved edge reaches down to the button hole.



Then tilt the knife toward you and push it carefully forward so that you do not cut through the stitched threads. The small red bead will serve as a guide. Stop cutting when it reaches the closing bar.

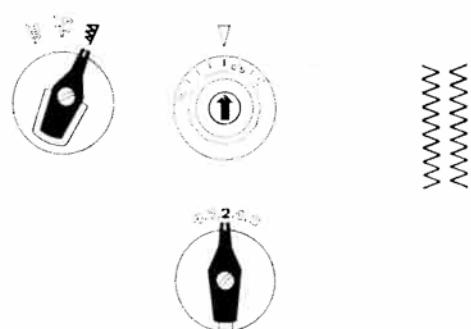
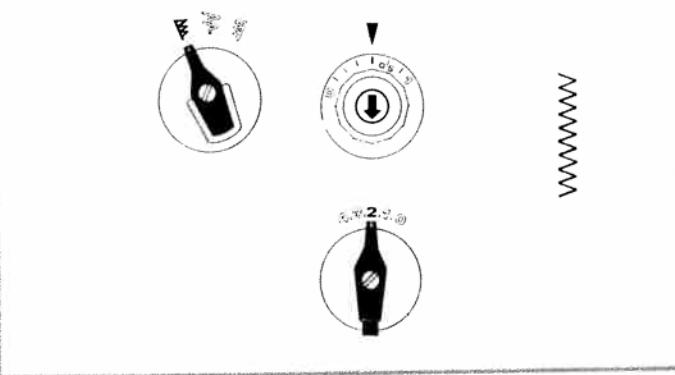


Reinforced buttonholes

Garments subject to heavy wear or buttons subject to special strain may sometimes require even stronger buttonholes and this is how you make them:

Set the stitch selector on 4 and the starting point regulator on left. Then set the stitch length knob on 0.4. Press in the reverse stitching button and lock it. Set the stitch width knob on 2 and lock it. Sew the first column as for an ordinary buttonhole.

When the column is sufficiently long, stop the machine with the needle raised out of the fabric, turn the knob to right-hand starting point and disengage by pressing it upward. Sew the next column without making any closing bar. Stop the machine with the needle out of the fabric when the second column is as long as the first.



ACCESSION NUMBER

(cont.)

Turn the knob to the left starting position, press in the reverse sewing button and lock it in position. Sew the first column once more. If you should have difficulty with the feeding, you can increase the stitch length somewhat.



Then make the crosswise stitches. Set the stitch width on 4 and release the reverse stitching knob. Sew 3—4 stitches while holding back the fabric from the feed. Don't forget that the needle must be out of the fabric when making the next setting.

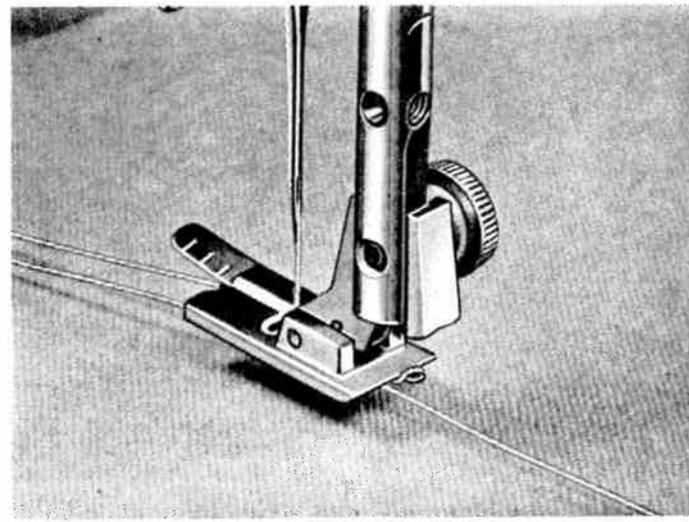
Now turn the knob to the right-hand starting point and the stitch width to 2 and sew the second column.

Then set the stitch width knob on 4 and sew the closing stitches 3—4 times while holding back the fabric.

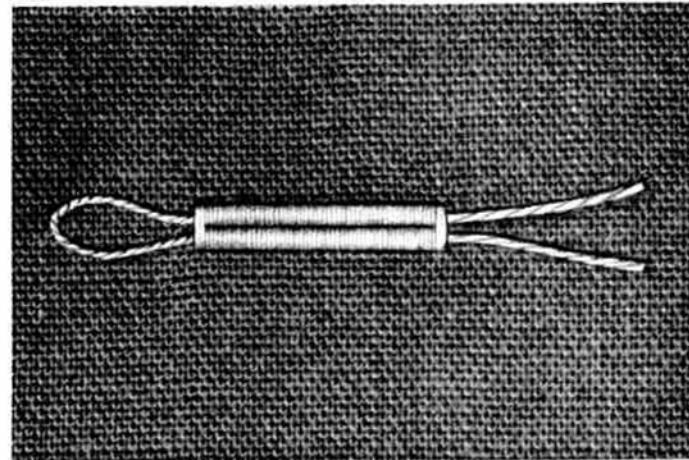
Finish off the buttonhole by setting the stitch width knob on 0 and locking the thread with several stitches while holding back the fabric.

Corded buttonholes

Take some heavier thread, such as buttonhole twist or extra heavy thread, as your inserted cord. Attach the thread loop around the "heel" of the buttonhole foot as shown in the picture, stretch the thread and lower the presser foot. The buttonhole is sewn as usual and the extra thread is allowed to follow around without being pulled.

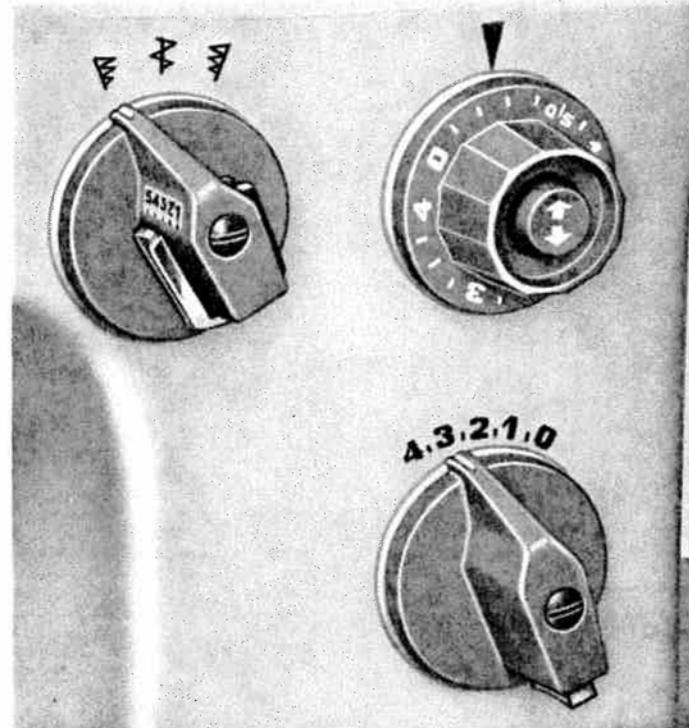


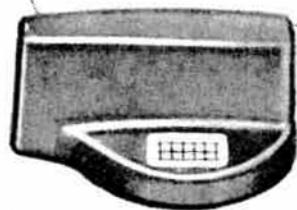
When the buttonhole is finished, pull the ends of the thread so that the loop forms a reinforcement on one end of the buttonhole. Cut off the thread at the other end or, even better, thread the ends through to the reverse side and tie them.



Sewing on buttons

Set the regulator knob on the left-hand starting point. The stitch length can be disregarded since the feeder must be disengaged, which we will return to shortly. Set the machine for zigzag stitching. Adjust the stitch width to the holes in the button. Most machine-made buttons have a standard spacing of $\frac{1}{8}$ to $\frac{5}{16}$ " (3—4 mm) between the holes, regardless of the size of the button.

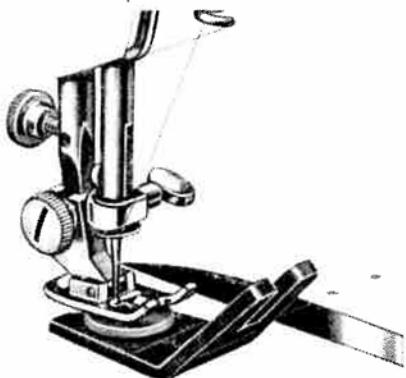
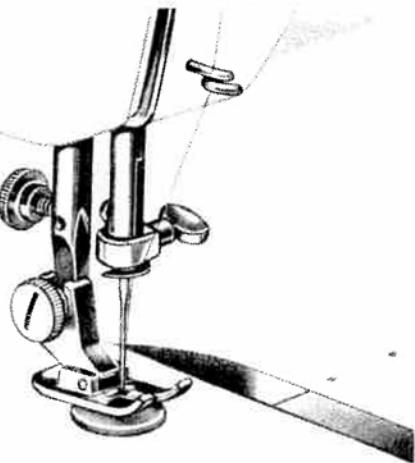




Sewing on buttons

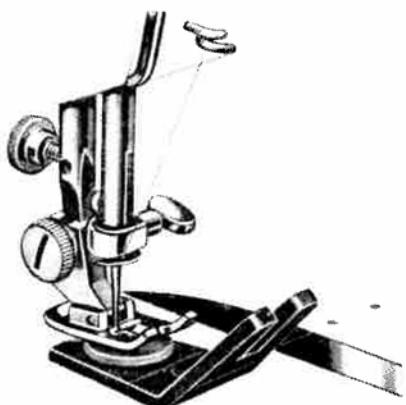
(cont.)

Lower the feed dog by turning the drop feed button half a turn. When the buttons have been sewn on and you are returning to ordinary sewing, turn the drop feed button into its previous position. Place the button so that two of the holes come in the recess of the presser foot. Set the stitch width knob on a suitable setting — approximately 3, turn the hand wheel toward you and test carefully that the needle goes through the centre of first one hole and then the other. Depress the foot control without disturbing the position of the button. Hold both thread ends behind the presser foot and sew 5—6 stitches, then move to the other holes and repeat the process. Set the stitch width knob on 0 and lock the thread.



Button reed

When sewing buttons on garments, "stem" is often desired so that the button stands away from the fabric slightly. You can use the button reed for this. The thin end can be use for sewing buttons on thinner materials, the thick end for heavier fabrics.



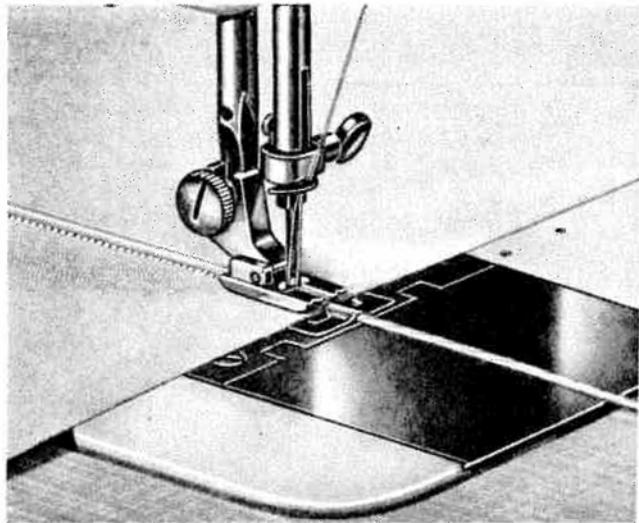
Mark the place where the button is to be sewed on and place the garment under the presser foot without lowering it. Insert the button reed as shown in the illustration and so that the marking shows in the centre of the opening. Place the button on top end lower the presser foot.

Kaiseu Seams

Exchange the ordinary needle for a twin needle and be sure to see that it is pressed up high into the needle clamp. Change to presser foot 41 11 389 and fit the raised seam attachment with its straight edge toward you. If you wish to use a gimp cord, lay this under the raised seam attachment when you put it on. Place a spool of thread on each of the spool pins and thread on both sides of the middle tension disc. Continue threading in the same way as for a single thread but with one thread through each hole in the thread take-up lever. And finally, one thread in each of the needles.

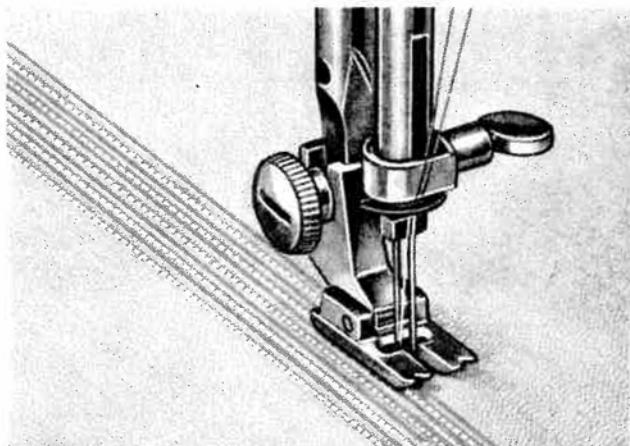


In order to prevent the threads from becoming entangled, it is advisable to thread one at a time. Adjust the machine for straight stitching. The height of the raised seam is adjusted by means of the thread tension — the harder the thread tension the higher the seam will be. If you are using a gimp cord, first pull it out well behind the presser foot and then it will only be necessary to see that it runs freely while you are sewing.



Parallel raised seams

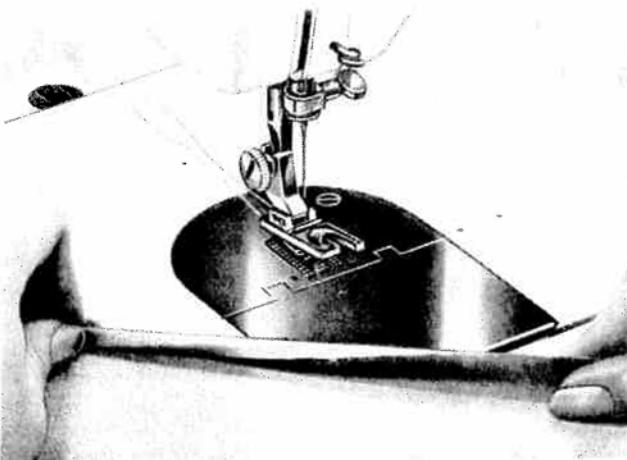
If you wish to sew several parallel seams, you can use the grooves on the bottom of the presser foot as edge guides. Place the previously sewn seam to the left or to the right of the one you are about to sew and let the presser foot guide the work.



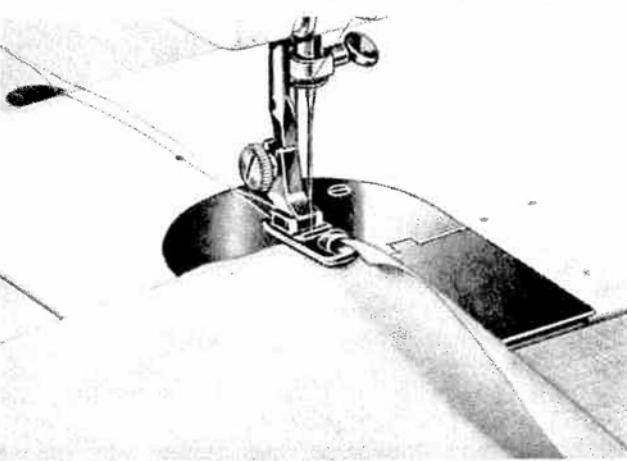
HEMMERS



The hemmers are used when you want to sew long hems in fabrics which are not excessively thick. Hemmer 41 11 385 gives a hem about $\frac{3}{16}$ " (5 mm.) wide.



The edge which is to be hemmed must be trimmed and straight. You should fold the edge over twice — first $\frac{5}{32}$ " (4 mm.) and then $\frac{3}{16}$ " (5 mm.). You only need to fold it in this way in the beginning of the hem, the hemmer itself will take care of the rest of the work.



Insert the folded edge of the fabric into the hemmer so that it comes properly in under the presser foot. Lower the presser foot. Sew a stitch where the hem starts. Hold the ends of the thread firmly in your right hand and lift the hemmer somewhat in order to get the edge of the fabric into the scroll.



Hold the fabric as shown in the picture and let the machine feed it without pulling or holding the fabric back. If the edge of the material tends to slide out of the hemmer, guide it somewhat to the right. If too much material enters the hemmer, draw the fabric somewhat to the left.

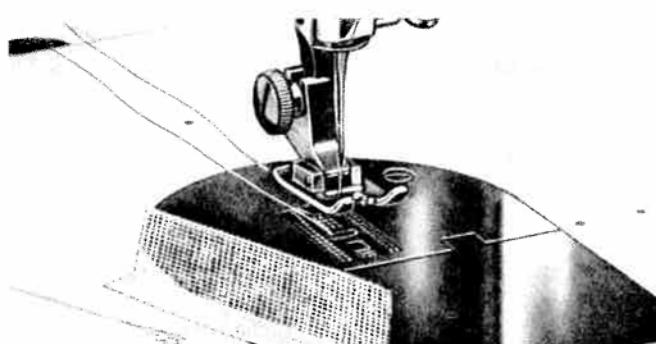
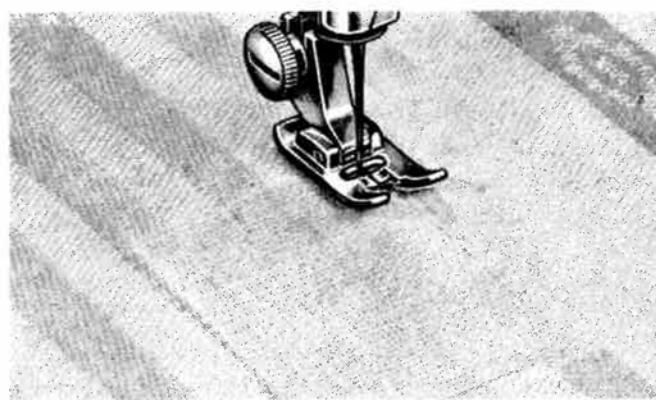
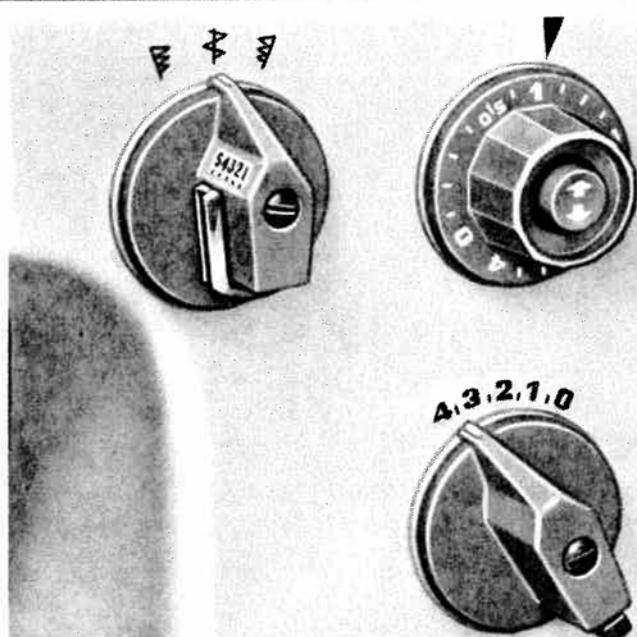
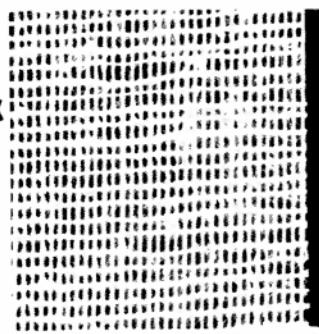
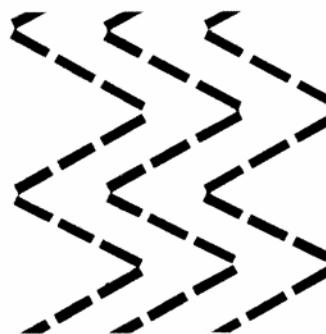
Quick mend

Practica

Combina

Quick mend is a Husqvarna-method, which helps you to darn and mend neatly. The basic stitch is the three-step zig-zag. You also need a piece of tarlatan (stiffened gauze). The stiffness in the tarlatan disappears in the next laundry and the mending "melts" into the surrounding fabric. The picture shows how the various stitches are woven into each other. This is done by allowing the stitch to run back and forth while the work is moved slightly sideways. You therefore sew back and forth across the fabric without turning it — sewing is done with the help of the reverse feed button.

Set the stitch selector on three-step zigzag, i.e. on figure 3. Then it is time to set the stitch length knob on 0.5—1, depending on the type of fabric to be mended. Thin fabrics require a shorter stitch length than thick ones. Finally, the stitch width knob should be set on 4. With regard to the thread, see the chapter "Do you have the right thread?"



Threadbare patches

Practica

Combina

Cut out a piece of tarlatan large enough to cover the worn place. Lay it on the fabric and sew on the right side with "Quick-Mend". For short seams it is not necessary to turn the work around since you can sew back and forth with the reverse feed button. The more threadbare the patch, the shorter the stitch.

Worn edges

Practica

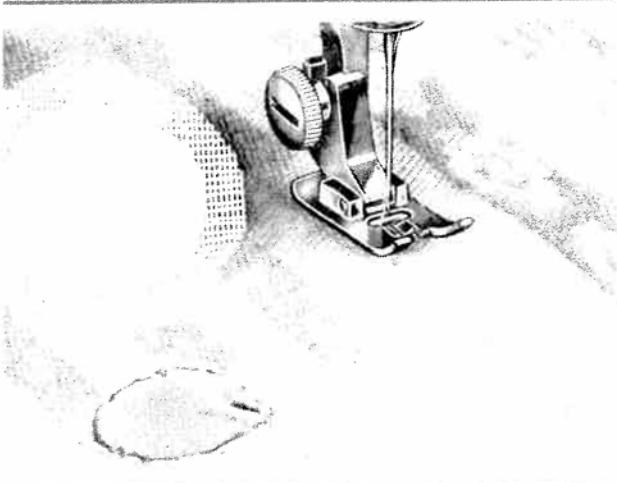
Combina

Fold a strip of tarlatan around the edge sew over the whole piece with Quick-Mend. If a piece of the fabric is missing, this must be replaced with patching material or a double fold of tarlatan before you sew across with the Quick-Mend. The stitch length should be



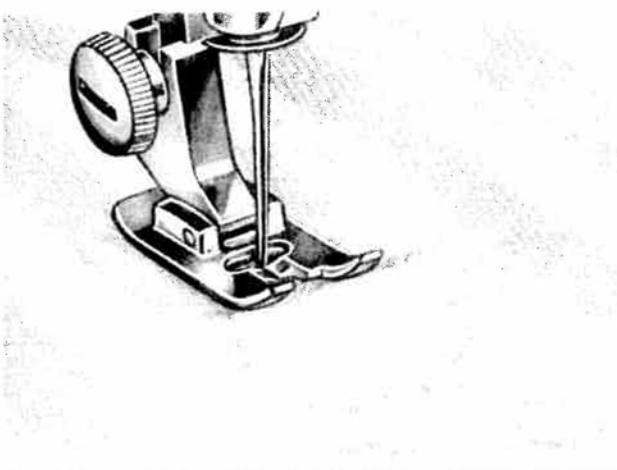
Small burns in cloths Practica Combina

Cut away the burned part, place a double bit of tarlatan over the hole and stitch closely all over on the right side with the "Quick-Mend". The tarlatan helps to hold the fabric in place and prevents it from puckering at the stitches. A small darn like this one is practically invisible after laundering. Stitch length 0.5.

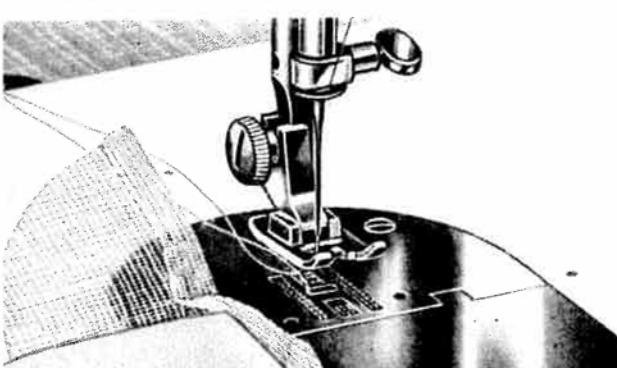


Larger holes Practica Combina

If the hole is larger than a fingernail, it must be filled in with some patching material — or if none is available — a double layer of tarlatan — before it is stitched over with the Quick-Mend. Cut out a piece of patching material which is larger than the hole. Stitch this onto a piece of tarlatan which has been cut about $\frac{3}{10}$ " (5 mm.) larger all around than the patching material. Trim the edges of the hole, place the patching material underneath and stitch it down all around.



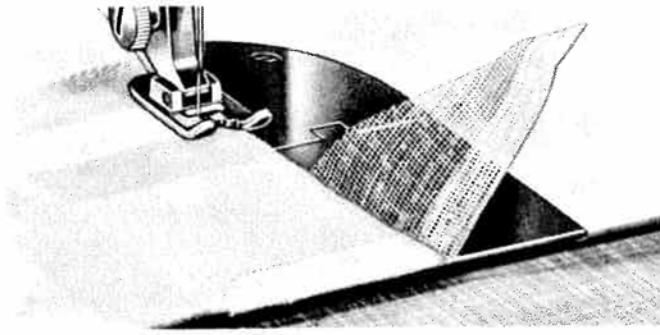
Sew on the right side with small stitches using "Quick-Mend". Be careful to see that the mend covers the tarlatan which is on the reverse side of the fabric. Stitch length 0.75 —1.



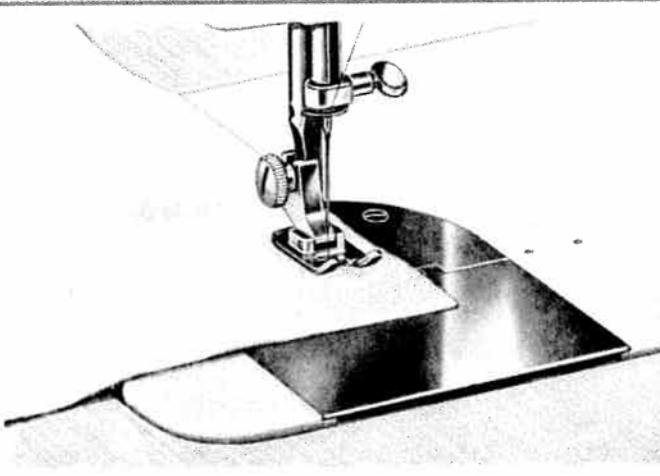
Torn corners Practica Combina

Cut out a new corner of the patching material similar to that which has been torn off. Stitch the new corner onto a piece of tarlatan.

sewed onto the piece of tarlatan so that it is edge to edge with the towel.



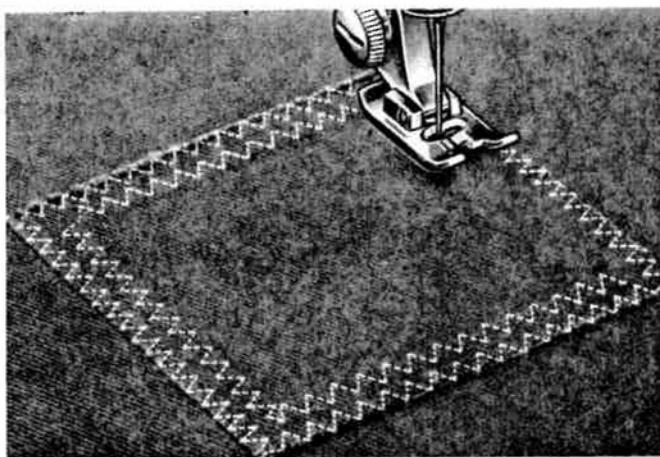
Fold the piece of tarlatan over the corner. Fold in the edges neatly and sew over with the "Quick-Mend".



Patching Practica Combina

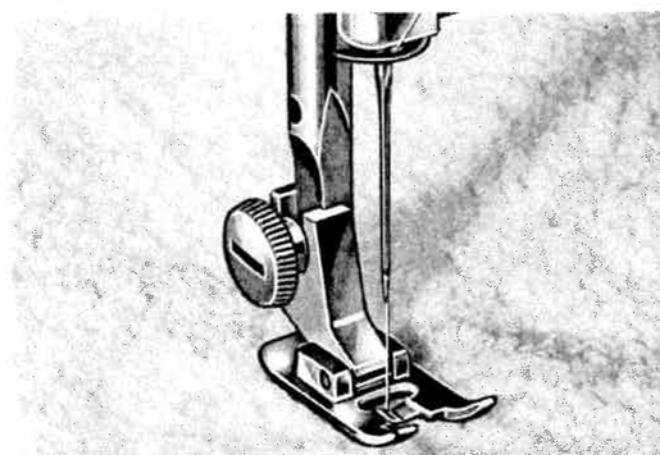
Large holes in towels, sheets, etc. are most easily mended by means of a patch sewed on with "Quick-Mend". Cut out a patch of the patching material large enough to cover the worn part completely. Sew the patch on the right side with Quick-Mend and cut away the worn material on the reverse side about $\frac{3}{16}$ — $\frac{3}{8}$ " (0.5—1 cm) from the stitching, and sew the edges of the patch down with Quick-Mend. After this you can sew one or more Quick-Mend seams all around in order to strengthen the mend still further.

Stitch length 1.



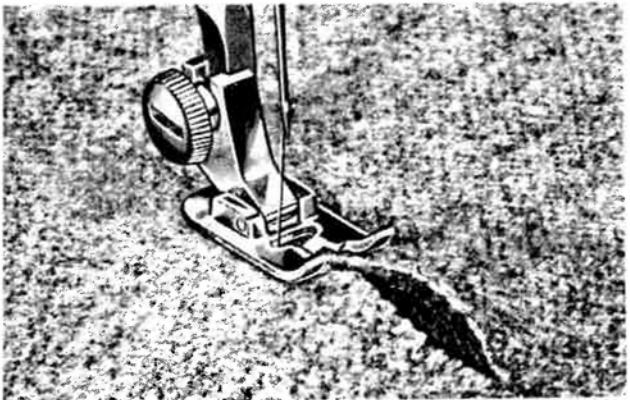
Patching terry cloth Practica Combina

Cut out a piece of terry cloth and sew it on with three-step zigzag over the worn spot which has first been trimmed. Sew back and forth over the whole patch with the Quick-Mend using long stitches. Stitch length 0.75—1.



Practica Combina

Clothes can easily be torn by being caught up in something. To repair such a tear, place a piece of lining fabric under the tear, arrange the torn threads and, if necessary, fill in with a small piece of the same fabric. Then stitch over the tear with Quick-Mend. Trim the lining fabric on the inside. Stitch length 0.75—1.



Let-in patch

Practica Combina

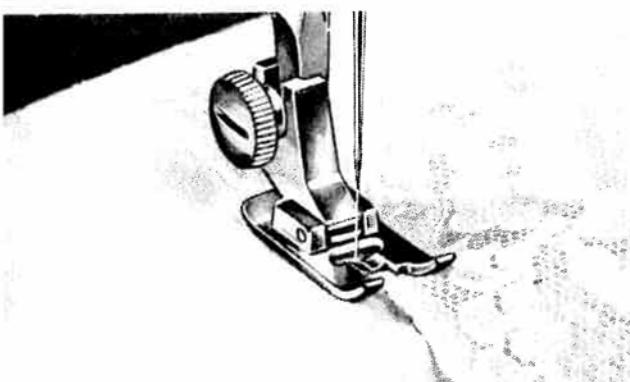
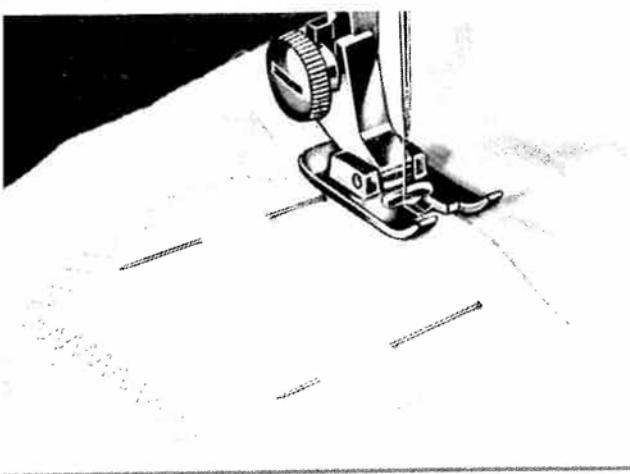
Trim the hole and then cut out a patch of the fabric large enough to completely fill the hole. Attach the patch to a larger piece of lining fabric — preferably taffeta — with a couple of pins and place it under the hole. Make sure that the edges fit together well and stitch directly across the join with Quick-Mend. Sew a couple of extra rows of stitching if the patched place will be subjected to wear. Stitch length 0.75—1.



Patching knitwear

Practica Combina

Trim the hole and cut out a piece of knitwear to cover the hole. Sew on with three-step zig-zag and reinforce by sewing once or several times around the hole. Tears in knitwear are mended by placing the edges together and sewing across the joint with three-step zigzag. Then reinforce them by sewing across the tear a couple of extra times. This is most suitably done by turning the fabric each time. Stitch length 0.75—1. Slacken the thread tension slightly and the stitches will be more elastic.



Broken seams

Practica Combina

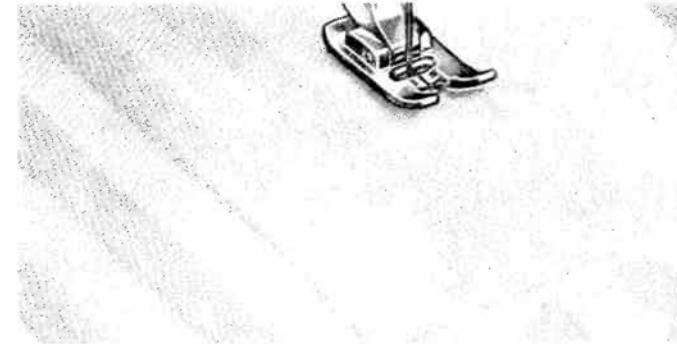
Broken seams in underwear are mended by sewing them together with three-step zigzag. Torn lace can also be mended with Quick-Mend using the thinnest possible mending cotton. You can use a piece of tulle as the mending material. Stitch length 0.75—1.

Various mending methods, useful for the zigzag models

Threadbare patches

Zig-Zag

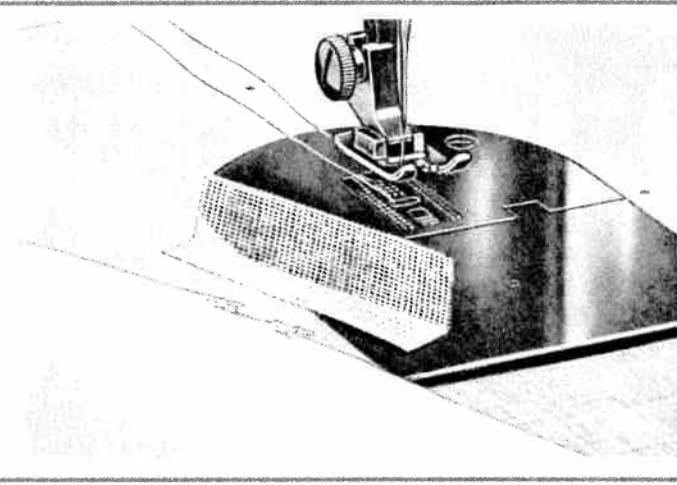
Cut out a piece of tarlatan large enough to cover the worn place. Lay it on the fabric and sew on the right side with straight stitch. For short seams it is not necessary to turn the work around since you can sew back and forth with the reverse feed button. The more threadbare the patch, the shorter the stitch.



Worn Edges

Zig-Zag

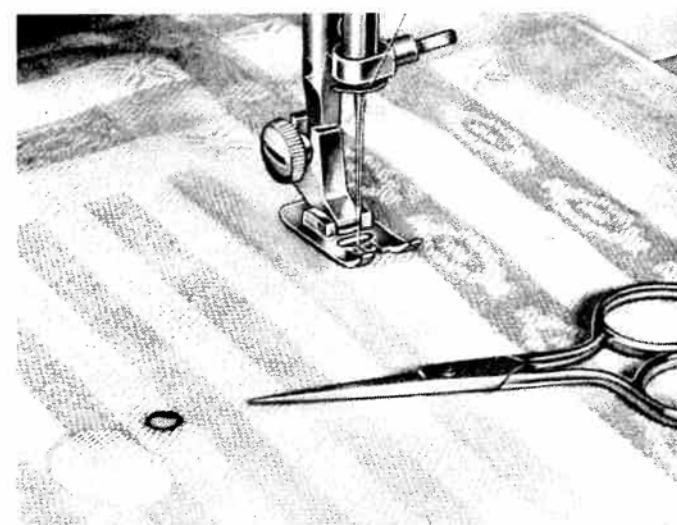
Fold a strip of tarlatan around the edge and sew over the whole piece with straight stitch. If a piece of the fabric is missing, this must be replaced with patching material or a double fold of tarlatan before you sew across with straight stitch. The stitch length should be about 0.75—1.



Small burns in cloths

Zig-Zag

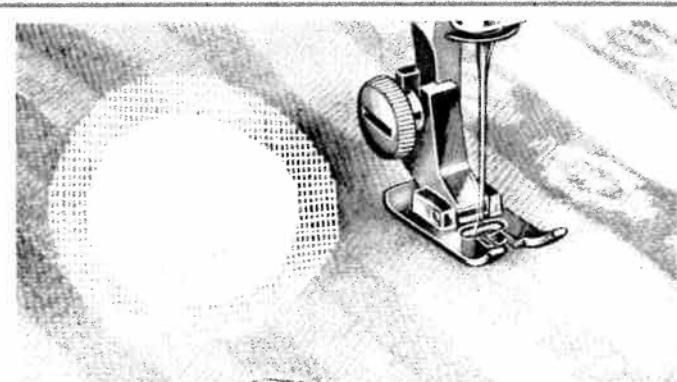
Cut away the burned part, place a double bit of tarlatan over the hole and stitch closely all over on the right side with straight stitch. The tarlatan helps to hold the fabric in place and prevents it from puckering at the stitches. A small darn like this one is practically invisible after laundering.



Larger holes

Zig-Zag

If the hole is larger than a fingernail, it must be filled in with some patching material — or if none is available — a double layer of tarlatan — before it is stitched over with straight stitch. Cut out a piece of patching material which is larger than the hole. Stitch this onto a piece of tarlatan which has been cut about $\frac{3}{16}$ " (5 mm.) larger all around than the patching material. Trim the edges of the hole, place the patching material underneath and stitch it down all around.

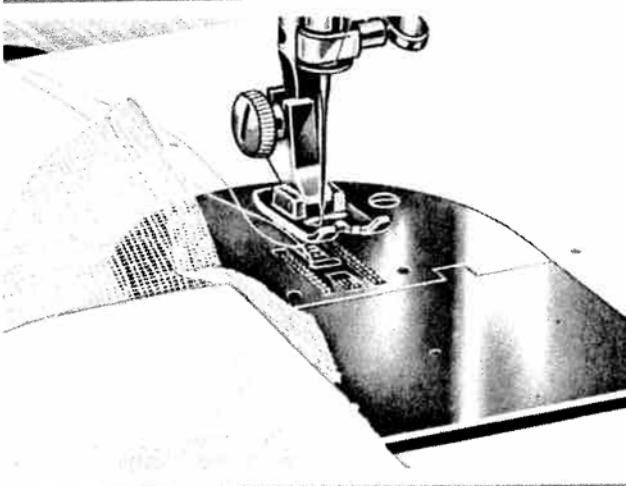




Zig-Zag

(cont.)

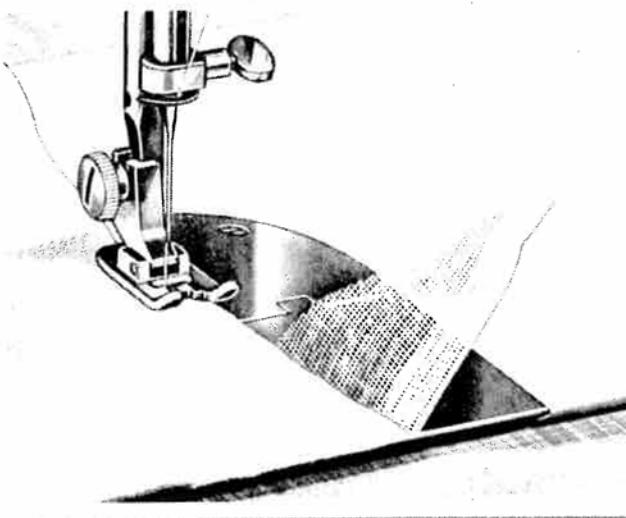
Sew on the right side with small stitches using straight stitch. Be careful to see that the mend covers the tarlatan which is on the reverse side of the fabric. Stitch length 0.75—1.



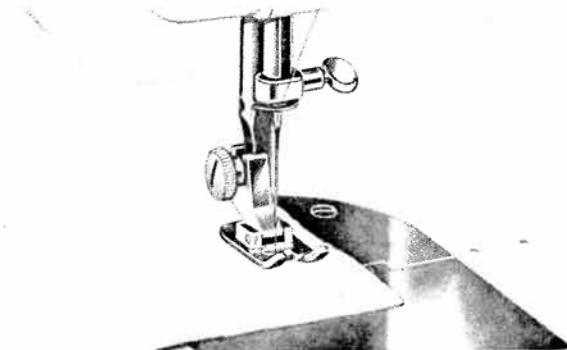
Torn corners

Zig-Zag

Cut out a new corner of the patching material similar to that which has been torn off. Stitch the new corner onto a piece of tarlatan.



Fit in the new corner which is sewed onto the piece of tarlatan so that it is edge to edge with the towel.



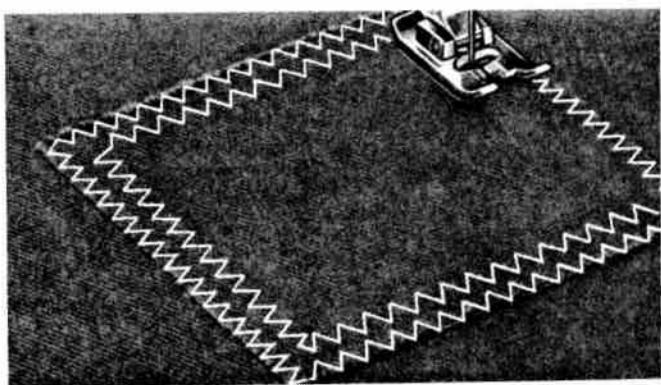
Fold the piece of tarlatan over the corner. Fold in the edges neatly and sew over with straight stitch.

Zig-Zag

Large holes in towels, sheets, etc. are most easily mended by means of a patch sewed on with zigzag. Cut out a patch of the patching material large enough to cover the worn part completely.

Sew the patch on the right side with zigzag and cut away the worn material on the reverse side about $\frac{3}{10}$ — $\frac{3}{8}$ " (0.5—1 cm) from the stitching, and sew the edges of the patch down with zigzag. After this you can sew one or more zigzag seams all around in order to strengthen the mend still further.

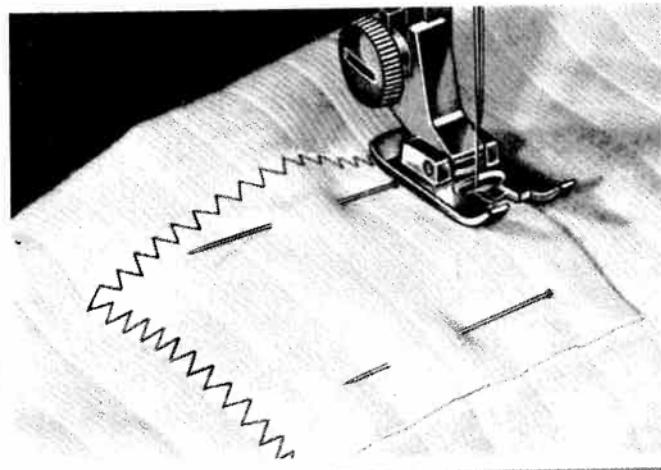
Stitch length 1.



Patching knitwear

Zig-Zag

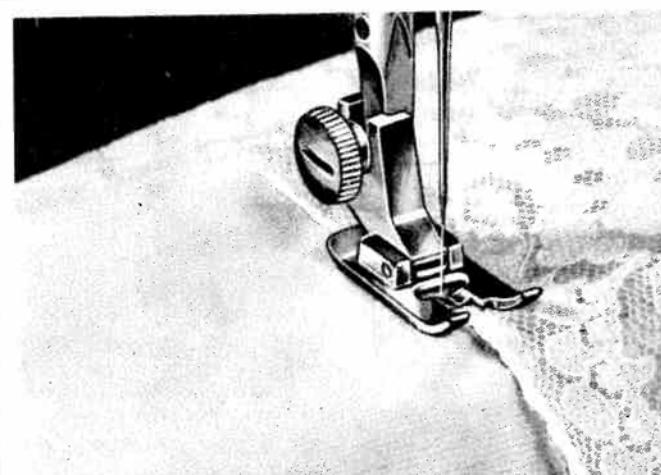
Trim the hole and cut out a piece of knitwear to cover the hole. Sew on with zigzag and reinforce by sewing once or several times around the hole. Tears in knitwear are mended by placing the edges together and sewing across the joint with zigzag. Then reinforce them by sewing across the tear a couple of extra times. This is most suitably done by turning the fabric each time. Stitch length 2, stitch width 3. Slacken the thread tension slightly and the stitches will be more elastic.

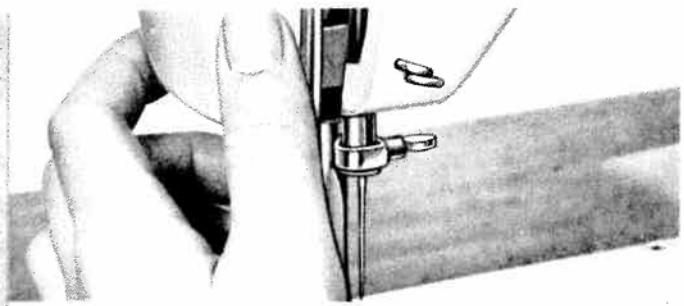


Broken seams

Zig-Zag

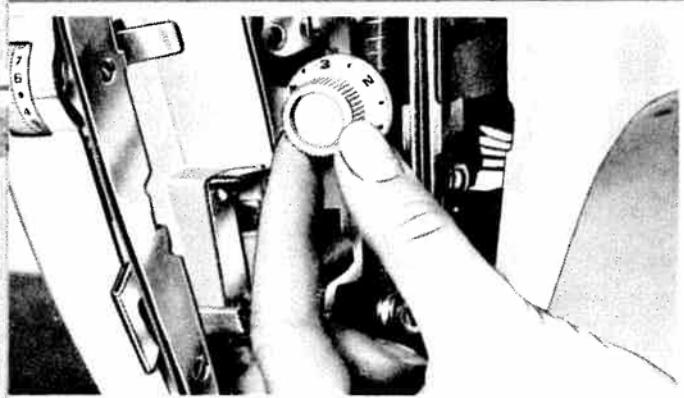
Broken seams in underwear are mended by sewing them together with three-step zigzag. Torn lace that has come loose, can also be mended with zigzag using the thinnest possible mending cotton. You can use a piece of tulle as the mending material. Stitch length 2, stitch width 3.



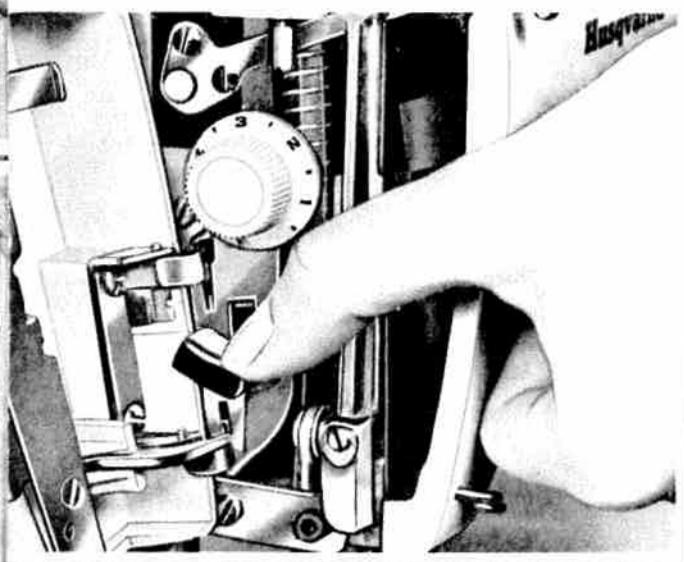


PRESSER FOOT PRESSURE

Presser foot pressure can be adjusted with the aid of a graduated knob located behind the cover on the left-hand side of the machine. Open the cover as shown in the illustration and turn outwards. When the cover is closed again, see that the thread is not jammed.



Set the knob in position 3 for normal pressure but for very thin fabrics it may be better to reduce the pressure somewhat, i.e. to set the knob at a lower figure.



Releasing foot pressure

Behind the cover on the left-hand side of the machine is a red button which releases presser foot pressure. Releasing pressure is done as follows: Press the red button downward toward you. Restore pressure by pressing the red button downward away from you.

Always lower the presser foot when you make adjustments. Releasing the pressure makes it possible to do all mending work by moving the fabric forwards, backwards and sideways by hand.



Mending with the ordinary presser foot and released presser foot pressure

The material should preferably be stretched in an embroidery frame. Use tarlatan as mending material for larger holes. Set the machine for straight stitching. After having lowered the feed dog and released the presser foot pressure, you can move the embroidery frame in any direction you choose, back and forth or in circles in order to mend the pattern in a tablecloth, for example.

Do not forget to restore presser foot pressure before using the



41 11 383
Presser foot for
straight stitching
and zigzag. Fitted
on the machine



41 11 385
Hemmer, $\frac{3}{16}$ "
(5 mm), straight and
zig-zag stitching



41 11 389
Raised seam
presser foot,
three grooves



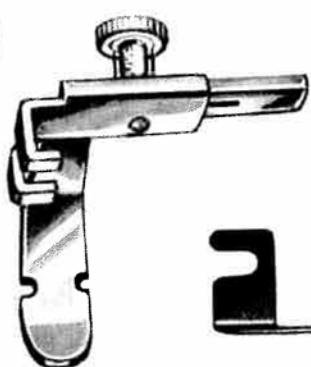
41 11 395
Pattern presser
foot.
Practica



41 11 650
Buttonhole
presser foot.



40 15 460
Darning foot,
with or without
cord insertion



41 11 483
Zipper foot,
adjustable



41 12 522
Blindstitching
attachment
Practica
Combina



40 15 427
Raised seam
attachment



Practica
A. 41 12 470-01
B. 41 12 470-02
C. 41 12 470-03
Seam former



40 15 399 Buttonhole knife



41 12 669 Large screwdriver



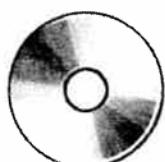
41 12 697 Small screwdriver



40 15 555 Cleaning brush



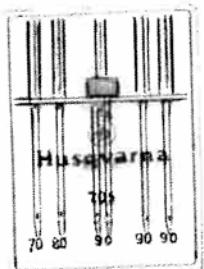
40 15 420 Edge guide



40 11 770



41 10 470



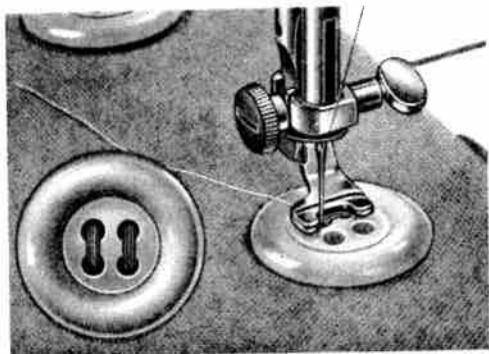
40 15 819



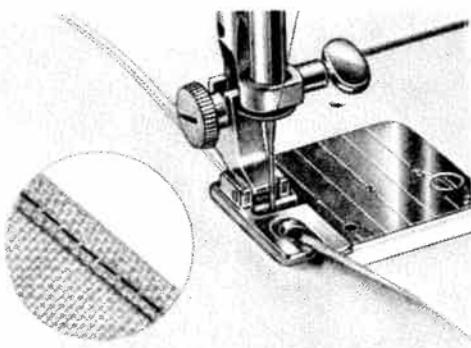
41 11 399



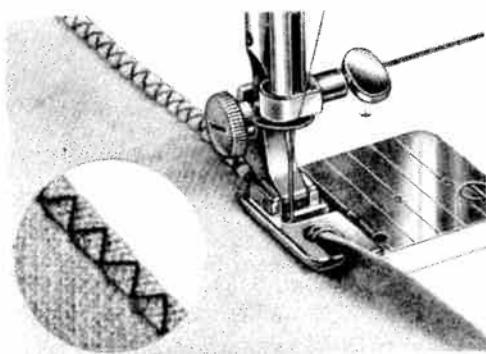
Extra accessories:



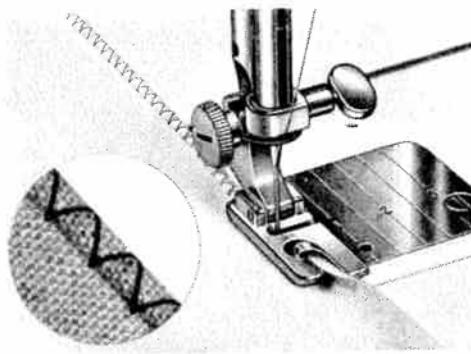
40 15 237. Presser foot for sewing on large buttons with high edges.



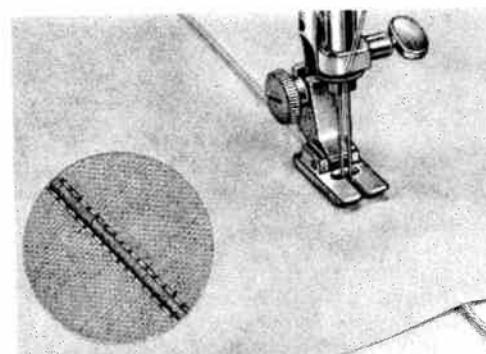
41 11 384. Straight stitch jointed hemmer, $\frac{5}{64}$ " (2 mm).



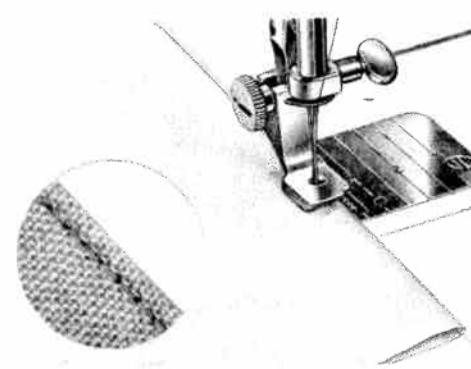
41 11 386. Jointed hemmer for scalloping, $\frac{1}{8}$ " (3 mm), zigzag and hard thread tension. Suitable for soft material.



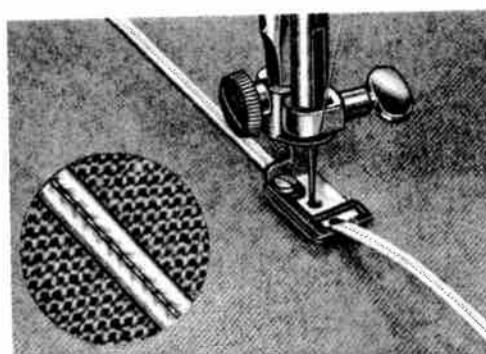
41 11 387. Jointed hemmer for rolled seams, $\frac{5}{64}$ " (2 mm), zigzag. Suitable for thin material.



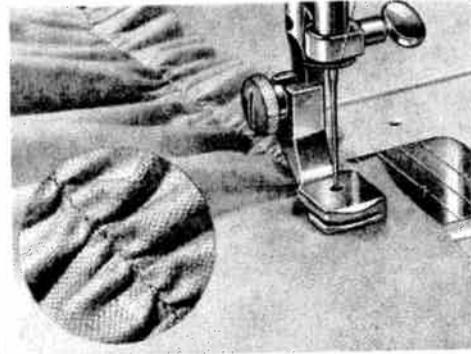
41 11 388. Jointed presser foot, 1 groove, for raised seam, with or without gimp.



40 93 022. Piping attachment. Insert the cord between the layers of the material.



40 93 005. Presser foot for attaching braiding, which is inserted through a guide and attached.



40 93 019. Presser foot for gathering. Gather the material as you sew, the harder thread giving the stronger gathering.



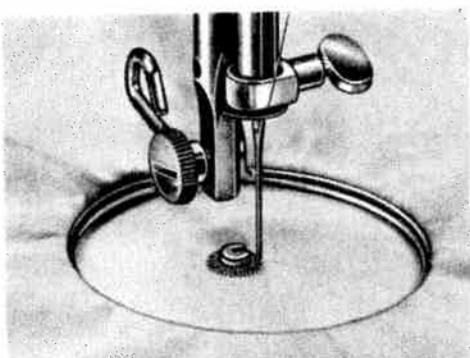
40 93 015
Presser foot, extra narrow, for straight stitching



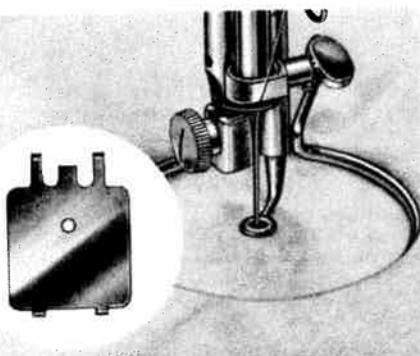
40 15 395
Presser foot for narrow stitches and zippers



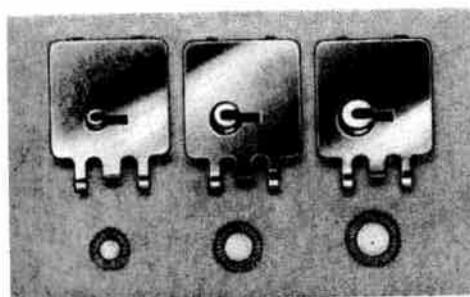
41 11 394
Presser foot for extra fine straight stitching in thin fabrics



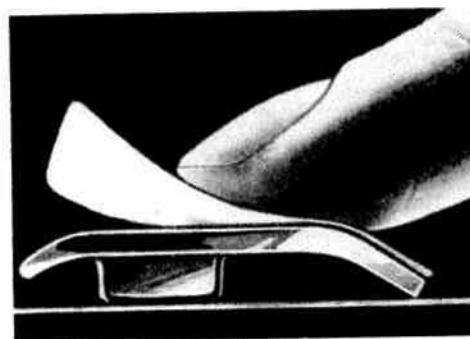
For making closing bars around holes, for example in belts, for cording or as embroidery, the feed dog is covered by a plate. Available for different hole-diameters.



40 15 454. Plate for darning and embroidering with straight stitching especially in thin fabrics.
41 10 586. Presser foot with round needle hole especially for straight stitch darning.



40 15 423. Throat plate for eyelets $\frac{1}{16}$ " (3.5 mm).
40 15 432. Throat plate for eyelets $\frac{3}{16}$ " (5 mm).
40 15 433. Throat plate for eyelets $\frac{7}{32}$ " (6 mm).



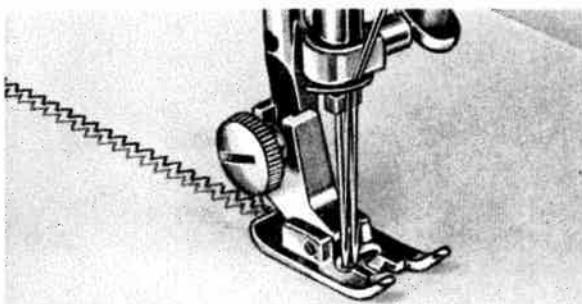
41 11 866-01. Glide plate, Teflon. Attach under the presser foot when sewing in foam plastic, textile plastic, laminated fabrics. For other fric-



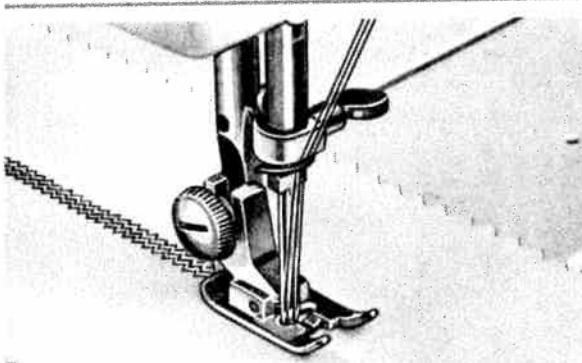
40 93 028. Frame with 8" (20 cm) diameter for darning and embroidery.
40 93 029. Frame with 6" (15 cm) diameter for darning and embroidery.
40 93 030. Frame with 4" (10 cm) diameter for darning and embroidery.



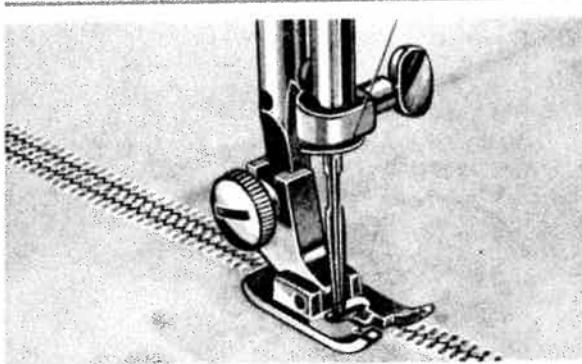
40 15 398. Frame with $2\frac{5}{16}$ " (5.5 cm) diameter



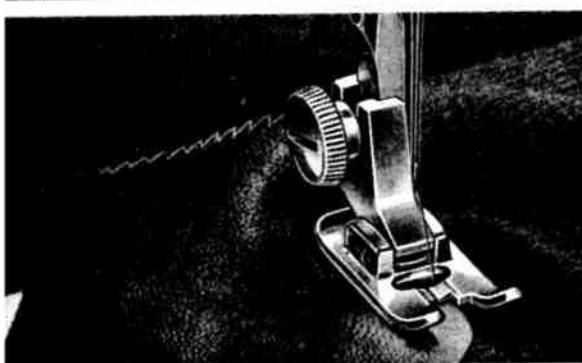
Twin needle No. 90 with $\frac{5}{64}$ " (2 mm) needle distance.
41 11 621-01
Twin needle No. 90 with $\frac{1}{8}$ " (3 mm) needle distance.
41 11 621-02
Twin needle No. 90 with $\frac{5}{32}$ " (4 mm) needle distance.
For parallel seams and twin needle seams. Max. stitch width setting for zig-zag and pattern stitching 2.5 resp. 1.5 and 0.



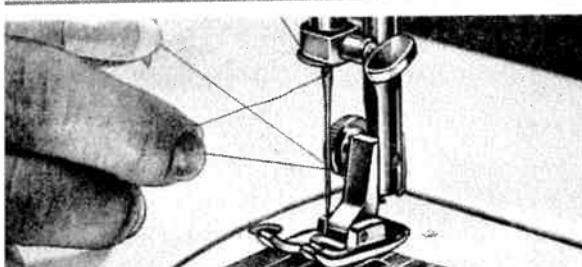
41 11 622-01
Triple needle No. 90 with $\frac{3}{32}$ " (2.5 mm) needle distance.
41 11 622-02
Triple needle No. 90 with $\frac{1}{8}$ " (3 mm) needle distance.
For parallel seams. Max. stitch width setting for zig-zag and pattern stitching 2 resp. 5.
A special spool pin, 40 15 600, can be used for placing the three spools.



41 12 684
Wing needle produces a hemstitch-effect. Can be used for zig-zag and pattern stitching.

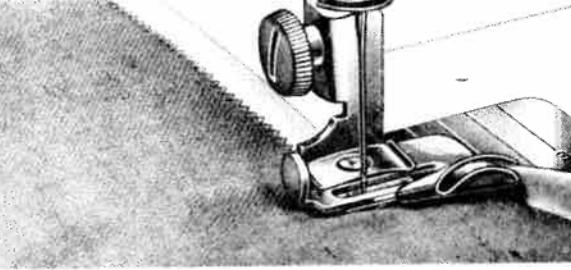


41 12 683
Cutting needle No. 100 for sewing in leather.



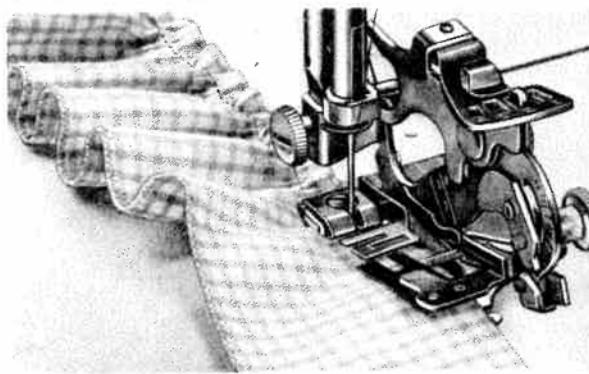
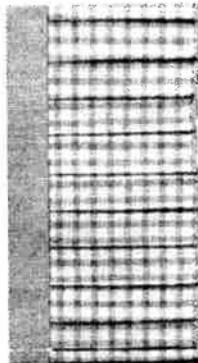
41 12 685-03
No. 100 Slotted needle for people with impaired vision. The needle-eye is supplied with a slot. When threading, pass the thread along the needle, until the thread glides

Binder. Can be used for folded as well as unfolded edgings up to a width of $\frac{15}{16}$ " (24 mm).



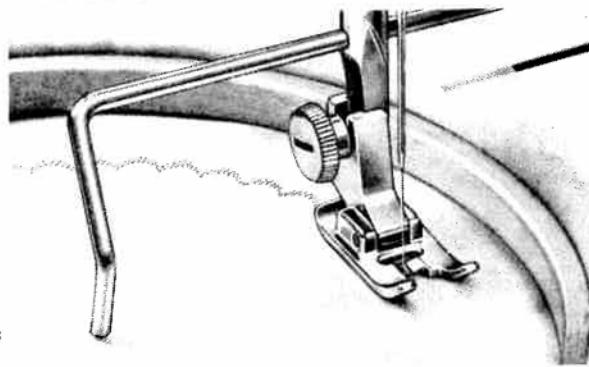
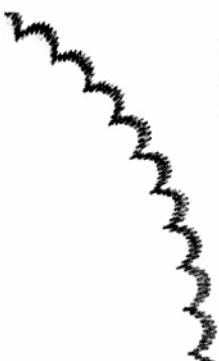
40 93 020

Ruffler. Can be set for gathering or puckering at every, every 6th, or every 12th stitch.



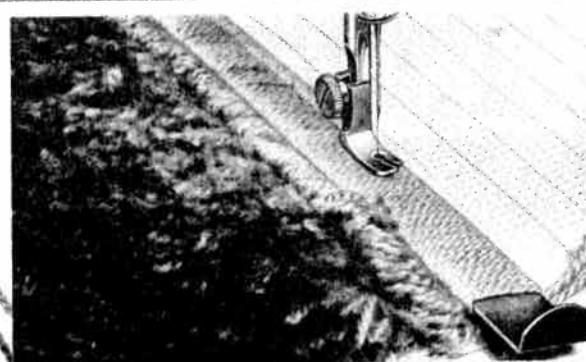
40 15 813

Attachment for circular sewing. Stretch the fabric over an embroidery hoop, place a pin in the middle and attach in the guide.



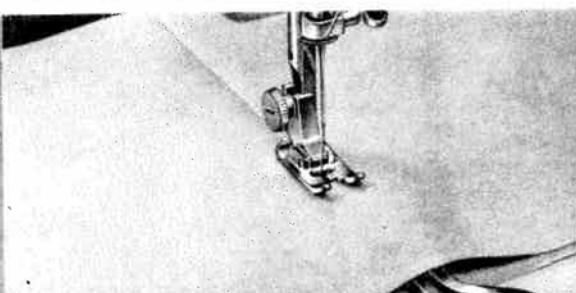
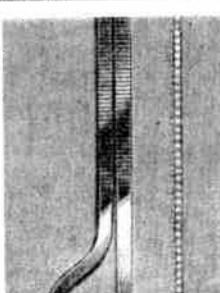
40 99 001

Weaver's reed. Wind the yarn over the reed and sew on with straight stitch. Special presser foot for rug sewing, 40 93 017.



40 15 367

Hemstitcher. Put the fork between two layers of material, which are sewn together with straight stitching and long



Fault Finding

In most cases poor sewing results are due to a damaged needle. Therefore always examine the needle first before taking any other action.

Unattractive stitches — unattractive seam

1. The needle is incorrectly inserted. See page 5.
2. The needle is bent or blunt. Change the needle.
3. The thread tension is not correct. See page 10.
4. The machine may be incorrectly threaded. Correct threading, see pages 8—9.
5. The needle, thread and fabric do not correspond. See table on page 5.
6. Incorrect lower thread. It should be of the same thickness as the upper thread.
7. Lower thread unevenly wound. See page 6.
8. Bobbin incorrectly inserted in bobbin case. See page 7.

Lower thread not brought up by the upper thread

Needle incorrectly inserted. See page 5.

Needle breaks

1. The throat plate is too loose. Tighten the throat plate with the larger screwdriver. See page 45.
2. You may have helped the machine to feed through the fabric by pulling it. The needle can then easily come against the throat plate and be broken.

Upper thread breaks

1. The needle is bent or blunt.
2. The needle is incorrectly inserted. See page 5.
3. The upper thread is incorrectly threaded. Correct threading on pages 8—9.
4. The upper thread may be too tightly tensioned. See thread tension on page 10.
5. Knots in the thread.
6. The needle and thread do not correspond. See needle and thread table on page 3.
7. The hole in the throat plate may be chipped and have sharp edges. Polish with an emery cloth or change the throat plate. See page 45.
8. The needle groove or needle eye may have sharp edges. Change needle. See page 5.

Lower thread breaks

1. Bobbin case incorrectly inserted. See pages 7, 8.
2. Lower thread may be incorrectly threaded. See page 7.
3. Lower thread too tightly tensioned. Page 7 show how to correct this fault.
4. Bobbin unevenly wound. See page 6.
5. Bobbin wound too full. See page 6.

6. Throat plate hole damaged. Polish it with an emery cloth or change the throat plate. See page 45.

Machine does not feed the fabric

1. The stitch length knob is set on 0.
2. The feed dog may be lowered. Raise it by turning the feed dog lowering button half a turn. See page 28.
3. Presser foot pressure may be released. See page 38.

Irregular bobbin winding

1. The bobbin is not pressed in far enough. See page 8.
2. The machine is not correctly threaded for bobbin winding. See page 6.
3. The thread guides for bobbin winding is not correctly adjusted. See page 6.

Uneven thread tension

1. This may be due to poor thread quality.

Fabric puckers

1. The upper thread is too tightly tensioned. Correct upper thread tension is illustrated on page 10.
2. Upper and lower thread tension too tight in relation to the thickness of the fabric. See page 10.

Stitch length varies

The feed dog is choked by dust and dirt. Clean it with the special brush. See page 45. The presser foot pressure is released. See page 38.

The seam is too loose — fabric layers not held together

The thread tension is too slack. The adjustment of the thread tension is illustrated on page 10.

Machine does not sew the stitch indicated

Seam former incorrectly inserted. Directions on page 22.

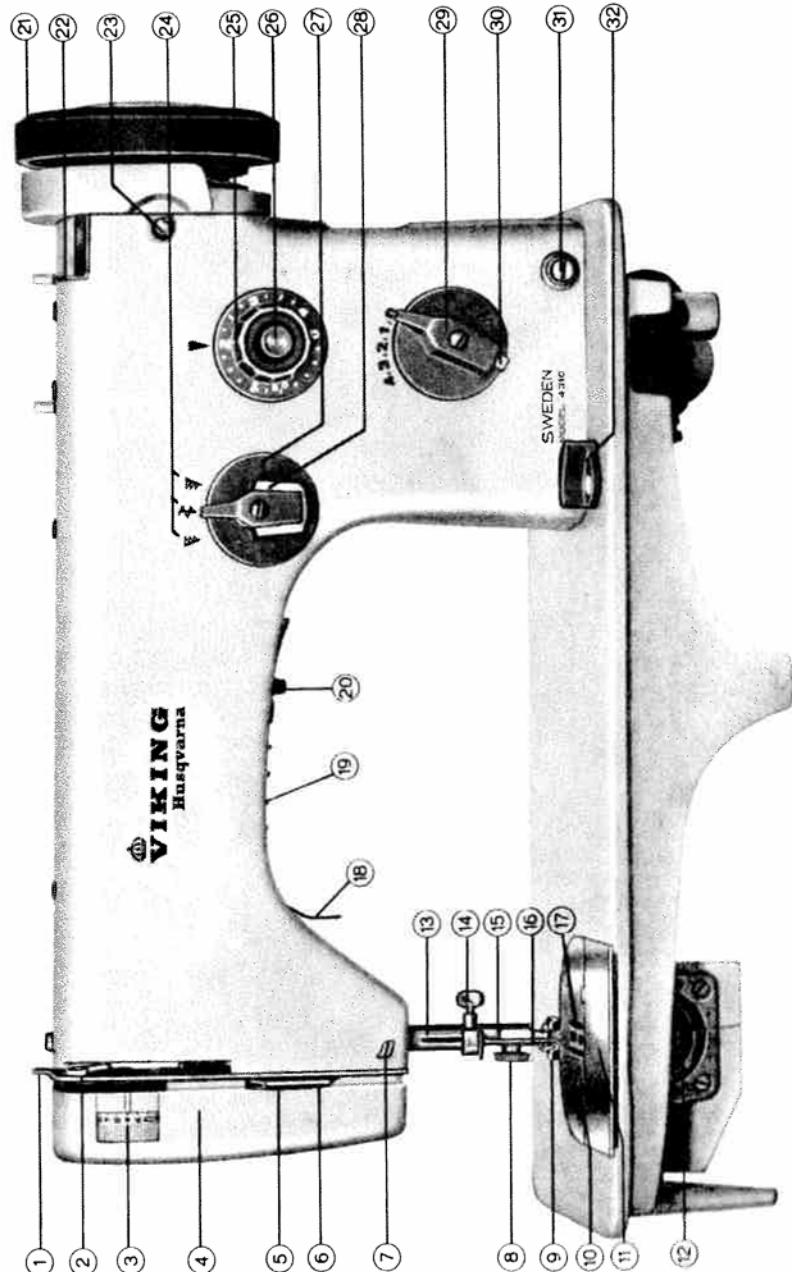
Machine runs sluggishly

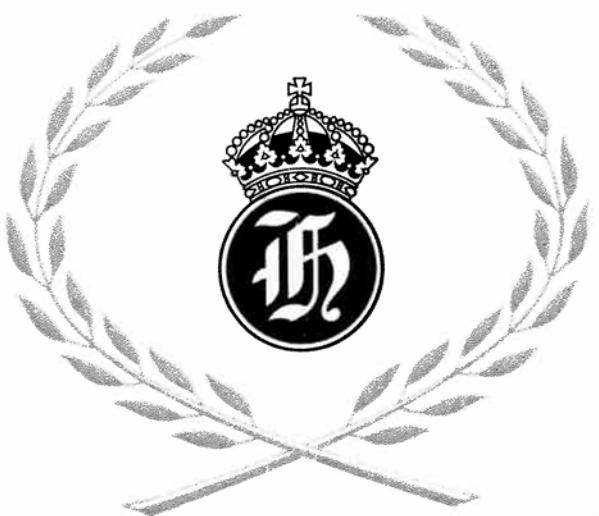
1. Dirt or lint have got under the throat plate. Loosen the throat plate and brush clean between the teeth of the feed dog.
2. Dirt or lint have got into the shuttle. Take out the bobbin and bobbin case and brush clean with special brush.
3. This may also be because the machine has not been lubricated for a long time. See the chapter on lubrication on page 44. If the wrong type of oil was previously used, consult your local Husqvarna representative.

Machine is noisy

In most cases this is due to poor lubrication. See lubrication instructions on page 44.

1. Thread guide
2. Thread take-up lever
3. Thread tension knob
4. Face plate
5. Thread take-up spring
6. Thread guide
7. Thread guide
8. Presser foot screw
9. Presser foot
10. Throat plate
11. Shuttle door
12. Bobbin case
13. Needle bar
14. Needle clamp screw
15. Presser bar
16. Needle
17. Feed dog
18. Finger grip for lowering lamp
19. Lamp guard
20. Lamp switch
21. Hand wheel
22. Thread guide for bobbin winding
23. Bobbin spindle
24. Symbols for left-, middle- and right starting positions
25. Stitch length knob
26. Reverse feed button
27. Needle position control
28. Stitch selector (not available on Zig-Zag)
29. Stitch width knob
30. Stop for buttonhole sewing
31. Thread guide for bobbin winding
32. Drop feed button





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